#160

***Notes for*:**

Meehl, P. E., & Yonce, L. J. (1994). Taxometric analysis: I. Detecting taxonicity with two quantitative indicators using means above and below a sliding cut (MAMBAC procedure). *Psychological Reports*, *74*, 1059-1274. (Monograph Supplement 1-V74)

***For easier handling of this large monograph, main text and appendices are in two files*:**

160_MAMBAC_text_only.pdf (pp. 1059-1110 of the publication, including References)

160_MAMBAC_Appendices.pdf (pp. 1111-1274, Appendices A–J) .

TEXT (pp. 1059-1110)**: *Helpful information subsequent to the initial publication*:**

p. 1061 & 1110, "submitted" publication:

Waller, N. G., Putnam, F. W., & Carlson, E. B. (~~submitted~~ 1996) Types of dissociation and dissociative types: a taxometric analysis of dissociative experiences. *Psychological Methods*, *1*, 300-321.

p. 1062, bottom lines, "A general treatment of the blind inductive scanning approach…" see:

Meehl, P. E. (1999). Clarifications about taxometric method. *Applied & Preventive Psychology*, *8*, 165-174. Reprinted, 2006, in *A Paul Meehl Reader: Essays on the practice of scientific psychology* (pp. 389-404). (N. G. Waller, L. J. Yonce, W. M. Grove, D. Faust, & M. F. Lenzenweger, Eds.). Mahwah, NJ: Erlbaum.

p. 1067, footnote 5: Monte Carlo samples are available online.

APPENDICES (pp. 1111-1274)**:**

LJY, October 2019

APPENDIX A

DERIVATIONS

Derivation of Formula for $\bar{d}_y(x)$

Assume quantitative indicators x, y are uncorrelated within taxon (t) and complement (c).

$$D_y = \bar{y}_\mathrm{t} - \bar{y}_\mathrm{c} \qquad \text{Mean taxon-complement difference on } y \text{ (``crude } y \text{ validity'')} \tag{1}$$

Absent nuisance correlation, the mean y for any set of cases depends on x only via x determining the taxon rate of the set. (The observed regression of y on x arises solely from taxon mixture in x regions.)

The difference between the mean y of cases falling above an x-cut and those falling below is

$$\bar{d}_y(x) = \bar{y}_\mathrm{a}(x) - \bar{y}_\mathrm{b}(x) \tag{2}$$

The mean y for above-cut cases depends only on the taxon proportion above the cut (h_a = hit rate above),

$$\bar{y}_\mathrm{a}(x) = \bar{y}_\mathrm{c} + h_\mathrm{a} D_y \tag{3}$$

Similarly, below an x-cut,

$$\bar{y}_\mathrm{b}(x) = \bar{y}_\mathrm{t} - h_\mathrm{b} D_y \tag{4}$$

Subtracting [4] from [3],

$$\begin{aligned} \bar{d}_y(x) &= \bar{y}_\mathrm{a}(x) - \bar{y}_\mathrm{b}(x) \\ &= (\bar{y}_\mathrm{c} + h_\mathrm{a} D_y) - (\bar{y}_\mathrm{t} - h_\mathrm{b} D_y) \\ &= (\bar{y}_\mathrm{c} - \bar{y}_\mathrm{t}) + h_\mathrm{a} D_y + h_\mathrm{b} D_y \\ &= -D_y + h_\mathrm{a} D_y + h_\mathrm{b} D_y \\ &= D_y(h_\mathrm{a} + h_\mathrm{b} - 1) \end{aligned} \tag{5}$$

Derivation of Dish Shape for Nontaxonic Case

Gaussian case.—Consider $\bar{d}_x(x) = \bar{x}_\mathrm{a}(x) - \bar{x}_\mathrm{b}(x)$, means of x *itself* above and below a sliding x-cut. The standard score mean of an interval of the Gaussian function is the ordinate divided by the area,

$$\bar{x}_\mathrm{a} = \frac{\phi(x)}{p}, \quad \bar{x}_\mathrm{b} = \frac{\phi(x)}{q} \qquad \text{where } \phi(x) \text{ is the density,}$$

thus we have

(uses of t + c all corrected to Roman font)

$$\bar{d}_x(x) = \frac{\phi(x)}{p} - \left(-\frac{\phi(x)}{q}\right) \qquad \text{second term minus because mean below cut is} < 0$$

$$= \phi(x)\left(\frac{1}{p} + \frac{1}{q}\right)$$

$$= \phi(x)\left(\frac{q+p}{pq}\right)$$

$$= \frac{\phi(x)}{pq}$$

Differentiating with respect to x, setting the derivative = 0 for an extremum,

$$\frac{\mathrm{d}}{\mathrm{d}x}\left(\frac{\phi(x)}{p\,q}\right) = \frac{p\,q\,\phi'(x) - \phi\,(x)\,(p\,q)'}{(p\,q)^2} = 0$$

$$p\,q\,\phi'(x) - \phi\,(x)\,(p - p^2)' = 0$$

$$p\,q\,\phi'(x) - \phi\,(x)\,(p' - 2p\,p') = 0$$

$$p\,q\,\phi'(x) - \phi\,(x)\,\big(\phi\,(x) - 2\,p\,\phi\,(x)\big) = 0$$

$$p\,q\,\phi'(x) - [\phi\,(x)]^2\,(1 - 2\,p) = 0$$

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which is true only when $\phi'(x) = 0$ and $\phi(x) = \overset{.3989}{\cancel{0}}$, i.e., at $x = 0$. It is physically obvious that this unique extremum is a minimum rather than a maximum.

A numerical example from the Gaussian curve shows how clearly dish-shaped (concave upward) the $\bar{d}_y(x)$ function will be for the nontaxonic situation, given that y is a monotone statistical function of x so that $\bar{y}(x)$ is monotone in $\bar{x}$ (either $\bar{x}_a$ or $\bar{x}_b$). We consider $\bar{d}_x(x)$, the above-minus-below means for x itself. Cutting at the mean ($x = 0$), we have from the normal tables and the relations $\bar{x}_a = \frac{\phi(x)}{p}$, $\bar{x}_b = \frac{\phi(x)}{q}$ where $\phi(x)$ is the Gaussian density function,

$$\bar{x}_a = \frac{.3989}{.5000} = .7978$$

$$\bar{x}_b = \frac{-.3989}{.5000} = -.7978$$

Then the "MAMBAC" (in quotes here because we are treating only a single variable) function for x itself when cut at mean x_0 is

$$\bar{d}_x(x_0) = .7978 - (-.7978) \simeq 1.60$$

Cutting at +2 *SD*,

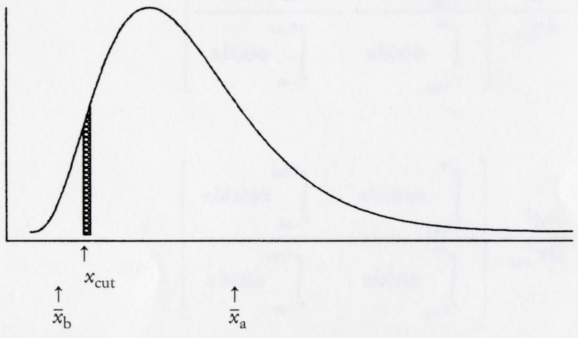
$$\bar{x}_a = \frac{.0540}{.0227} = 2.3789$$

$$\bar{x}_b = \frac{-.0540}{.9773} = -.0553$$

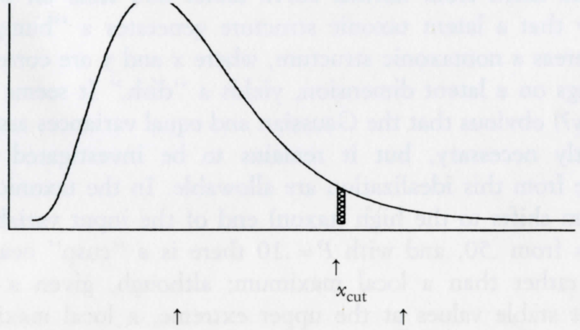
$$\bar{d}_x(x) = 2.3789 - (-.0553) \simeq 2.43$$

The cut at +2 *SD* yields a $\bar{d}_x(x)$ that is over 50% in excess of that yielded by the median cut. If y regresses linearly on x, the shrinkage in "dish-depth" between graphs of $\bar{d}_x(x)$ and $\bar{d}_y(x)$ is proportional to the alienation coefficient.

Non-Gaussian case.—The downward concavity of $\bar{d}_x(x)$ in the nontaxonic case does not depend on $\phi(x)$ being Gaussian, as is evident from the geometry of a skew distribution when cut at different points.



Cut x_{cut} low



Cut x_{cut} high

use parens

When x_{cut} is low, the increment at that point $\Delta\bar{x}_b$ when we shift x_{cut} is large and $\Delta\bar{x}_a$ is small; shifting a few cases from one group to the other (shaded area) changes the mean of a small set more than a large one. "A small statistical tail cannot wag a big statistical dog." While $\bar{x}_a$ and $\bar{x}_b$ are everywhere increasing, i.e., $\bar{x}'_a>0$ and $\bar{x}'_b>0$ at all x-cuts, the corresponding second derivatives are opposite in sign, $\bar{x}''_a>0$ and $\bar{x}''_b<0$ everywhere. Hence $\bar{x}'_a(x)$ and $\bar{x}'_b(x)$ intersect at only one cut, a unique extremum. Since $\bar{d}'_x(x)=\bar{x}'_a(x) - \bar{x}'_b(x)$ is negative on the extreme left and positive at the extreme right, the unique extremum is a minimum. For symmetrical $\phi(x)$ the minimum is centrally located, but the depth of the dish will vary with degrees of platy- or leptokurtosis. Skewness shifts the low point and produces a "bent" bowl. Whether and how the minimum is related to mean, median, and mode for different non-Gaussian $\phi(x)$ we do not know. We must leave to readers more competent in distribution theory to examine the derivatives, differentiating under the integral sign with respect to cut x_{cut},

$$\frac{d}{dx_{cut}}\left[\frac{\int_{x_{cut}}^{\infty} x\phi(x)dx}{\int_{x_{cut}}^{\infty}\phi(x)dx} - \frac{\int_{-\infty}^{x_{cut}} x\phi(x)dx}{\int_{-\infty}^{x_{cut}}\phi(x)dx}\right]$$

$$\frac{d^2}{dx^2_{cut}}\left[\frac{\int_{x_{cut}}^{\infty} x\phi(x)dx}{\int_{x_{cut}}^{\infty}\phi(x)dx} - \frac{\int_{-\infty}^{x_{cut}} x\phi(x)dx}{\int_{-\infty}^{x_{cut}}\phi(x)dx}\right]$$

Less Favorable Situations

Error-free values taken from normal curve tables and tests on Monte Carlo samples show that a latent taxonic structure generates a "hump" in the $\bar{d}_y(x)$ graph, whereas a nontaxonic structure, where x and y are correlated due to factor loadings on a latent dimension, yields a "dish." It seems intuitively (geometrically?) obvious that the Gaussian and equal variances assumptions are not strictly necessary, but it remains to be investigated what degrees of departure from this idealization are allowable. In the taxonic case the graph's maximum shifts to the high (taxon) end of the input variable as the base rate P falls from .50, and with $P=.10$ there is a "cusp" near the extreme right end rather than a local maximum; although, given a large enough N to permit stable values at the upper extreme, a local maximum should be discernible. For good latent separations the hump/dish contrast permits high confidence discriminations between taxonic and factorial sources, as shown by near-perfect hit rates achieved by sorters inspectionally (Appendix D, pp. 1152-1156). However, the taxonic convexity decreases with lesser separations (Fig. 10 in the text, p. 1082) and input indicator separations less than 1 *SD* begin to produce a (nontaxonic) "dish"; a maximum does not occur at 1.21 *SD* separation in the normal case. The interaction between weak separation, unequal variances, non-Gaussian distributions, nuisance covariances, and base rate is very complicated, and we cannot offer rigorous mathematical formulations at this time. We urge readers competent in distribution theory to attack this difficult problem. Meanwhile, the investigator can usually avoid falsely inferring nontaxonicity from a "dish" pattern by using consistency tests. We hope to expand upon and refine consistency tests for the MAMBAC procedure in subsequent publications.

There are some arguments and derivations that may shed a little light on the matter. A sufficiently adverse combination of low P, weak separation, and unequal variances can result in a latent structure wherein the entire taxon frequency curve falls below the complement class envelope. There is then no hitmax cut (intersection of the two unrelativized frequency functions), and the "best bet" for sorting casewise is always to classify in accordance with the larger base rate (in our field, usually Q; cf. Meehl, 1956). If the unrelativized frequency functions have an intersection, i.e., an x-value at which $f_t(x)=f_c(x)$, that cut will improve on "playing the base rate" (cf. Cureton, 1957, commenting on Meehl & Rosen, 1955; Meehl, 1956). If the taxon curve is completely covered by the complement curve, the over-all hit rate H achieved *by cutting anywhere* is less accurate than simply sorting into the larger (base-rate) category $(Q>P)$. Under that unfavorable condition, if $p=$ total (manifest) proportion above (and $q=1 - p$), then

$$H=ph_a+qh_b<Q \qquad \text{for any cut} \qquad [6]$$

Lemma: To prove,

$$h_a+h_b - 1 < ph_a+qh_b \qquad \text{for any cut} \qquad [7]$$

$$h_a+h_b - (p+q) < ph_a+qh_b$$

$$h_a+h_b < p(1+h_a)+(1 - p)(1+h_b)$$

$$< p+ph_a+1+h_b - p - ph_b$$

$$h_a+h_b - ph_a - h_b - ph_b < 1$$

$$h_a(1 - p)+h_bp < 1$$

$$h_aq+h_bp < p+q \qquad \text{true for all allowed values}$$

and all these steps being reversible, the lemma is proved. Note that this derivation is distribution-free, flowing directly from algebraic identities between defined probabilities.

If $(h_a + h_b - 1)$ has an extremum, at that locus we must have, from [6] and [7],

$$h_a + h_b - 1 < ph_a + qh_b < Q$$

and since $(h_a + h_b - 1) \rightarrow Q$ at the extreme right, the graph of $(h_a + h_b - 1)$ must ascend from that extremum to Q, hence must be a minimum—so the $\bar{d}_y(x)$ graph is a "dish" rather than a "hump," despite the taxonic structure.

In terms of derivatives,

$$h' = h'_a + h'_b$$

differentiating with respect to total cases N_b below a sliding cut (more illuminating than if with respect to x),

$$\frac{dh_b}{dN_b} = \frac{1}{N_b}(H'_b - h_b)$$

$$\frac{dh_a}{dN_a} = \frac{1}{N_a}(H'_a + h_a)$$

If an extremum exists, these sum to zero. Whether at that value $\frac{d^2h}{dN_b{}^2}$ is positive or negative depends in a complicated way on how H'_a, H'_b, h_a, and h_b are changing with N_b, and we have been unable to prove anything useful about that for the general case.[14] At the hitmax cut, maximizing total hits H (not the sum of hit *rates* above and below, $h = h_a + h_b$), the derivatives are

$$\frac{dh_b}{dN_b} = \frac{1}{N_b}(h_b - \tfrac{1}{2})$$

$$\frac{dh_a}{dN_a} = \frac{1}{N_a}(h_a + \tfrac{1}{2})$$

and these are, in general, not equal at the hitmax cut, so h' does not vanish there.

We note that our rule of thumb, not to employ indicators whose latent separations yields less than 75% hits when $P = \tfrac{1}{2}$, variances are equal, and both curves Gaussian, comes to

$$H = ph_a + qh_b = .75$$

where $p = q = \tfrac{1}{2}$, so

$$h_a = h_b = .75$$

$$h_a + h_b - 1 = .50 \simeq Q = P$$

that is, this is the break-even point where the best cut yields an over-all hit rate equal to that achievable by diagnosing from the base rate alone (either direction).

Source of Hi/Lo Formulas for Estimating Base Rate

As the cut moves upward, demarcating the extreme high tail of the input distribution, the hit rate above approaches 1. With large samples of real data, it will actually equal 1, since there is a cut above which no complement cases lie. Asymptotically, the proportion of hits below the cut approaches the proportion of the complement class, Q, in the entire group. Thus, at the high end we can infer the asymptotic values $h_a \rightarrow 1$, $h_b \rightarrow Q$, and write

$$_{\text{Hi}}[\bar{d}_y(x)] \simeq (h_b + h_a - 1) \times \text{separation}_y \simeq Q \times (\bar{y}_t - \bar{y}_c)$$

Similarly at the low end, as $h_b \rightarrow 1$, $h_a \rightarrow P$, we can write,

$$_{\text{Lo}}[\bar{d}_y(x)] \simeq (h_b + h_a - 1) \times \text{separation}_y \simeq P \times (\bar{y}_t - \bar{y}_c)$$

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[14] "Statistical rigorists" may complain that the important threshold question, taxonic/nontaxonic, resting on the $\bar{d}_y(x)$ graph's (hump/dish) configuration, should be solved analytically for the general case by ascertaining conditions for an extremum to be a maximum or a minimum. We share the motivation but we cannot satisfy it and doubt the possibility of doing so. Differentiating $\bar{d}_y(x) = (h_a + h_b - 1)(\bar{y}_t - \bar{y}_c)$ with respect to x, we require for an extremum that

$$\frac{dh}{dx} = \frac{dh_b}{dx} + \frac{dh_a}{dx}$$

$$= \frac{1}{N_b}\left(\frac{dH_b}{dx} - \frac{dN_b}{dx}h_b\right) + \frac{1}{N_a}\left(\frac{dH_a}{dx} - \frac{dN_a}{dx}h_a\right) = 0$$

The second derivative is

$$\frac{d^2h}{dx^2} = \frac{\left\{N^2{}_a\left[N_b\left(\frac{d^2H_b}{dx^2} - \frac{d^2N_b}{dx^2}h_b - \frac{dN_b}{dx}\frac{dh_b}{dx}\right) - \left(\frac{dH_b}{dx} - \frac{dN_b}{dx}h_b\right)\frac{dN_b}{dx}\right] + N^2{}_b\left[N_a\left(\frac{d^2H_a}{dx^2} - \frac{d^2N_a}{dx^2}h_a - \frac{dN_a}{dx}\frac{dh_a}{dx}\right) - \left(\frac{dH_a}{dx} - \frac{dN_a}{dx}h_a\right)\frac{dN_a}{dx}\right]\right\}}{N^2{}_bN^2{}_a}$$

which >0 for a dish and <0 for a hump, determined by the sign of the numerator since $N^2{}_a N^2{}_b > 0$. We discern no substitutions or cancellations to simplify this monster further (except that $N'_b\, h'_b = N'_a\, h'_a$ at an extremum, which does not get us anywhere). There seems no reason to expect that, considering various non-Gaussian distributions, e.g., Pearson's system of 12 curve types, the sign question can be answered except by inserting the numerical values of $\frac{dH^2}{dx^2}$, $\frac{dh_b}{dx}$, and so on. We have, therefore, studied the behavior of the $\bar{d}_y(x)$ numerical function directly for the normal case (error-free, from tables) and for Monte Carlo random samples, intending to investigate nonnormal and unequal-variance cases later. Meanwhile, researchers should try to use indicators not deviating excessively from Gaussian and should rely on the consistency tests described in the text when the $\bar{d}_y(x)$ graph is a shallow dish to decide whether the latent structure is taxonic but with a small separation producing the nontaxonic appearance. We invite more mathematically competent readers to try their hand at a general solution.

When the MAMBAC graph indicates that the underlying data structure is taxonic, the taxon base rate P can be estimated using the ratio of the $\bar{d}_y(x)$ values computed at the low and high ends of the distribution of the input variable. Theoretically, if we are out far enough on either end of the distribution to have quasi-pure sets of cases (complement or taxon), there is a latent-manifest relation:

$$R = \frac{{}_{\mathrm{Hi}}[\bar{d}_y(x)]}{{}_{\mathrm{Lo}}[\bar{d}_y(x)]} \simeq \frac{Q \cdot (\bar{y}_{\mathrm{t}} - \bar{y}_{\mathrm{c}})}{P \cdot (\bar{y}_{\mathrm{t}} - \bar{y}_{\mathrm{c}})} = \frac{Q}{P}$$

where the ratio of high/low MAMBAC values is observed. Then

$$\frac{1 - P}{P} = R$$

Thus we could estimate P by

$$\hat{P} = \frac{1}{R + 1}$$

However, the asymptotic relations $(h_{\mathrm{a}} + h_{\mathrm{b}} - 1) \rightarrow P$ at the extreme low end and $(h_{\mathrm{a}} + h_{\mathrm{b}} - 1) \rightarrow Q$ at the extreme high end can be treated as near-equalities only when N is very large; in such instances the tally of cases below the ${}_{\mathrm{Lo}}[x_{\mathrm{cut}}]$ and above the ${}_{\mathrm{Hi}}[x_{\mathrm{cut}}]$, while numerous enough for sampling stability, nevertheless make up such small proportions (${}_{\mathrm{Lo}}[p_{\mathrm{b}}]$, ${}_{\mathrm{Hi}}[p_{\mathrm{a}}]$) of the total cases that their not being counted in the total N has negligible effect. For smaller samples (e.g., $200 < N < 1000$), this is not always a safe approximation. At the high end, we may safely assume there is a cut ${}_{\mathrm{Hi}}[x_{\mathrm{cut}}]$ above which no complement cases actually lie (despite the complement's mathematical density tail$\rightarrow\infty$), because the expected value of false positives $NQp_n < 1$ for a cut taken far enough out. Thus, in the expression $h_{\mathrm{a}} + h_{\mathrm{b}} - 1$ the substitution $h_{\mathrm{a}} \simeq 1$ is quite safe; however, the substitution $h_{\mathrm{b}} \simeq Q$ is not quite correct, because

$$ {}_{\mathrm{Hi}}h_{\mathrm{b}} = \frac{H_{\mathrm{b}}}{N_{\mathrm{b}}} = \frac{NQ}{N_{\mathrm{b}}} \neq Q \qquad \text{since } N_{\mathrm{b}} < \mathrm{N}$$

Similarly at the low end, the correct hit-rate above is

$$ {}_{\mathrm{Lo}}h_{\mathrm{a}} = \frac{\mathrm{H}_{\mathrm{a}}}{N_{\mathrm{a}}} = \frac{NP}{N_{\mathrm{a}}} \neq P \qquad \text{since } N_{\mathrm{a}} < \mathrm{N}$$

The ratio of mean differences is

$$\frac{{}_{\mathrm{Hi}}[\bar{d}_y(x)]}{{}_{\mathrm{Lo}}[\bar{d}_y(x)]} = \frac{{}_{\mathrm{Hi}}[(h_{\mathrm{a}} + h_{\mathrm{b}} - 1)]\,(\bar{y}_{\mathrm{t}} - \bar{y}_{\mathrm{c}})}{{}_{\mathrm{Lo}}[(h_{\mathrm{a}} + h_{\mathrm{b}} - 1)]\,(\bar{y}_{\mathrm{t}} - \bar{y}_{\mathrm{c}})}$$

$$= \frac{{}_{\mathrm{Hi}}h_{\mathrm{b}}}{{}_{\mathrm{Lo}}h_{\mathrm{a}}}$$

$$= \frac{NQ}{{}_{\mathrm{Hi}}N_{\mathrm{b}}} \Big/ \frac{NP}{{}_{\mathrm{Lo}}N_{\mathrm{a}}}$$

$$= \frac{NQ}{{}_{\mathrm{Hi}}N_{\mathrm{b}}} \cdot \frac{{}_{\mathrm{Lo}}N_{\mathrm{a}}}{NP}$$

$$= \frac{Q\;{}_{\mathrm{Lo}}N_{\mathrm{a}}}{P\;{}_{\mathrm{Hi}}N_{\mathrm{b}}} \neq \frac{Q}{P} \text{ unless } {}_{\mathrm{Lo}}N_{\mathrm{a}} = {}_{\mathrm{Hi}}N_{\mathrm{b}}$$

To take this into account, we solve for $\hat{P}$ using the correction factor[15] $\frac{N_{\mathrm{a}}}{N_{\mathrm{b}}}$, an observed quantity,

$$\frac{Q}{P} = \frac{{}_{\mathrm{Hi}}N_{\mathrm{b}}}{{}_{\mathrm{Lo}}N_{\mathrm{a}}} \cdot \frac{{}_{\mathrm{Hi}}[\bar{d}_y(x)]}{{}_{\mathrm{Lo}}[\bar{d}_y(x)]} = R^*$$

$$\frac{1 - P}{P} = R^*$$

$$\hat{P} = \frac{1}{R^* + 1} \text{ and } \hat{Q} = 1 - \hat{P}$$

Once we have reached this point, estimates of other latent parameters are straightforward and are given in the main text.

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[15] This correction does improve estimates, but an alternative approach (to be investigated) is to *choose* the low cut such that ${}_{\mathrm{Hi}}N_{\mathrm{b}} = {}_{\mathrm{Lo}}N_{\mathrm{a}}$, that being the region in which (for rates $P \ll Q$, as in most psychopathology research) little or no taxon contamination is present.

APPENDIX B

CORRELATIONS GENERATED BY TAXON MIXTURES

While r is not an optimal descriptive statistic in this situation, the ideal conditions (linear regression, homoscedasticity, normality of marginals and within arrays) being unsatisfied, that does not, of course, prevent its being calculated, the latent equations being algebraic identities not dependent on those conventional optimality conditions. The proportion of variance "accounted for" remains correct so long as we treat of the whole range and do not plug in the alienation coefficient to predict dispersions within x-intervals. Also the y-means cannot be unbiasedly estimated in all the x-intervals. These predictive technological tasks are not before us, as they would be in, say, personnel selection. Despite Pearson's equation for the normal bivariate surface, psychologists rarely test for linearity, etc., and in scanning a large matrix of rs for candidate taxon indicators, the mixture model is what we care about.

Considering various combinations of base rate P, mean taxonic separations $\bar{d}$ (on both indicators), and nuisance correlations r_t [$= r_c$ in complement class], we can write latent equations: If $\sigma_x = \sigma_y = 1$ within classes (so that $\mathrm{cov}_t = r_t$ and $\mathrm{cov}_c = r_c$),

$$\mathrm{cov}(xy) = P\mathrm{cov}_t(xy) + Q\mathrm{cov}_c(xy) + PQ\bar{d}_x\bar{d}_y$$

$$= r_t + PQ\bar{d}^2 \qquad \text{since } \bar{d}_x = \bar{d}_y \text{ and } r_t = r_c$$

$$\mathrm{var}(x) = P\sigma^2_{tx} + Q\sigma^2_{cx} + PQ\bar{d}^2_x$$

$$= 1 + PQ\bar{d}^2_x$$

$$\mathrm{var}(y) = 1 + PQ\bar{d}^2_y = \mathrm{var}(x)$$

Then the observed r of a mixed group is

$$r_{mix} = \frac{\mathrm{cov}(xy)}{\sqrt{\mathrm{var}_x\ \mathrm{var}_y}} = \frac{\mathrm{cov}_{xy}}{\mathrm{var}(x)}$$

$$= \frac{r_t + PQ\bar{d}^2}{1 + PQ\bar{d}^2}$$

The following table shows values of manifest correlations generated by latent taxon mixtures under various parametric situations (base rate, separation, nuisance correlations).

CORRELATIONS GENERATED BY VARIOUS TAXON MIXTURES

P	$\bar{d}$	$r_t = r_c$				
		.00	.10	.20	.30	.40
.05	.50	.01	.11	.21	.31	.41
	1.00	.05	.14	.24	.33	.43
	1.33	.08	.17	.26	.35	.45
	1.50	.10	.19	.28	.37	.46
	2.00	.16	.24	.33	.41	.50
	2.50	.23	.31	.38	.46	.54
.10	.50	.02	.12	.22	.32	.41
	1.00	.08	.17	.27	.36	.45
	1.33	.14	.22	.31	.40	.48
	1.50	.17	.25	.33	.42	.50
	2.00	.26	.34	.41	.49	.56
	2.50	.36	.42	.49	.55	.62
.20	.50	.04	.13	.23	.33	.42
	1.00	.14	.22	.31	.40	.48
	1.33	.22	.30	.38	.45	.53
	1.50	.26	.34	.41	.49	.56
	2.00	.39	.45	.51	.57	.63
	2.50	.50	.55	.60	.65	.70
.30	.50	.05	.14	.24	.33	.43
	1.00	.17	.26	.34	.42	.50
	1.33	.27	.34	.42	.49	.56
	1.50	.32	.39	.46	.52	.59
	2.00	.46	.51	.57	.62	.67
	2.50	.57	.61	.65	.70	.74
.40	.50	.06	.15	.25	.34	.43
	1.00	.19	.27	.35	.44	.52
	1.33	.30	.37	.44	.51	.58
	1.50	.35	.42	.48	.55	.61
	2.00	.49	.54	.59	.64	.69
	2.50	.60	.64	.68	.72	.76
.50	.50	.06	.15	.25	.34	.44
	1.00	.20	.28	.36	.44	.52
	1.33	.31	.38	.45	.51	.58
	1.50	.36	.42	.49	.55	.62
	2.00	.50	.55	.60	.65	.70
	2.50	.61	.65	.69	.73	.77

Note.—P = Base rate; $\bar{d}$ = Mean difference in standard units of latent distributions; r_t, r_c = correlation within taxon group and within complement group.

APPENDIX C

Monte Carlo Curves For All Samples

Twenty-five samples have been generated for each parameter configuration. The first panel contains data from the first sample generated with a given configuration, the last panel contains data from the twenty-fifth sample. Panels on left-hand pages are from samples in which the latent situation is taxonic; on facing pages the latent situation is nontaxonic (factorial), with factor loadings to give expected amounts of correlation in the nontaxonic samples comparable to those for the taxonic samples. To make a taxonic/nontaxonic comparison, any panel on a left page may be compared with any panel on the facing page, i.e., there is no intrinsic connection between panels with the same sample number on facing pages. There are four continuous variables in each sample, hence 12 MAMBAC curves in each panel. The input/output ordering of the variables is shown on the left of each row of panels. Raw data points are plotted, then they are overlaid with smoothed curves using Tukey's repeated medians technique. The curves are offset within each panel (sample) for display. The configurations used for generating the Monte Carlo samples in the order they are presented are:

N^1	Interval Cuts	Taxonic Configuration				Nontaxonic Comparison		Expected $r_{ij}{}^6$
		p^2	SD^3	Factor Loadings[4]	File Code[5]	Factor Loadings[6]	File Code[5]	
100	*SD* units	.50	2.0	0	A1-50-20	.707	C100	.50
200	*SD* units	.50	2.0	0	A2-50-20	.707	C200	.50
300	*SD* units	.50	2.0	0	A3-50-20	.707	C300	.50
600	*SD* units	.50	2.0	0	A6-50-20	.707	C600	.50
300	*SD* units	.25	2.0	0	A3-25-20	.66	F300	.43
600	*SD* units	.25	2.0	0	A6-25-20	.66	F600	.43
300	*SD* units	.10	2.0	0	A3-10-20	.51	E300	.26
600	*SD* units	.10	2.0	0	A6-10-20	.51	E600	.26
300	*SD* units	.50	1.5	0	A3-50-15	.60	B300	.36
600	*SD* units	.50	1.5	0	A6-50-15	.60	B600	.36
300	*SD* units	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N3-50-20	$x = .84$ $y = .79$ $z = .77$ $v = .69$	N300	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
600	*SD* units	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N6-50-20	$x = .84$ $y = .79$ $z = .77$ $v = .69$	N600	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
300	*SD* units	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D3-50-v1	$x = .85$ $y = .76$ $z = .68$ $v = .54$	D300	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$
600	*SD* units	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D6-50-v1	$x = .85$ $y = .76$ $z = .68$ $v = .54$	D600	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$

(continued on next page)

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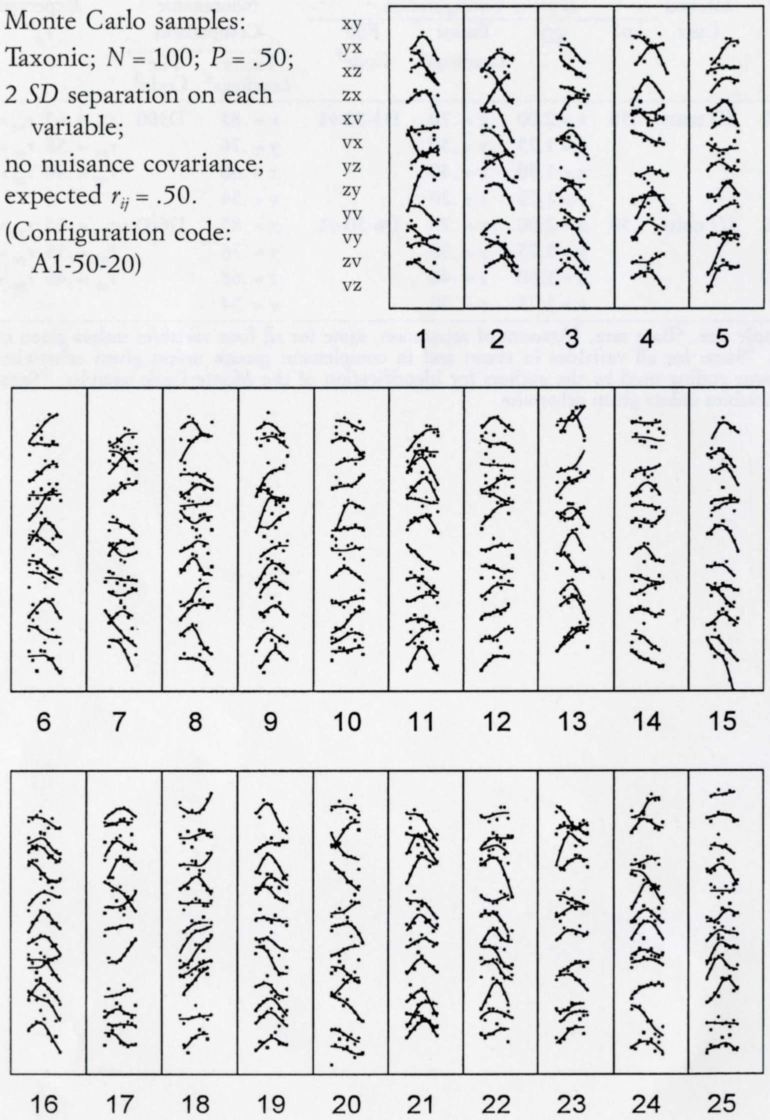
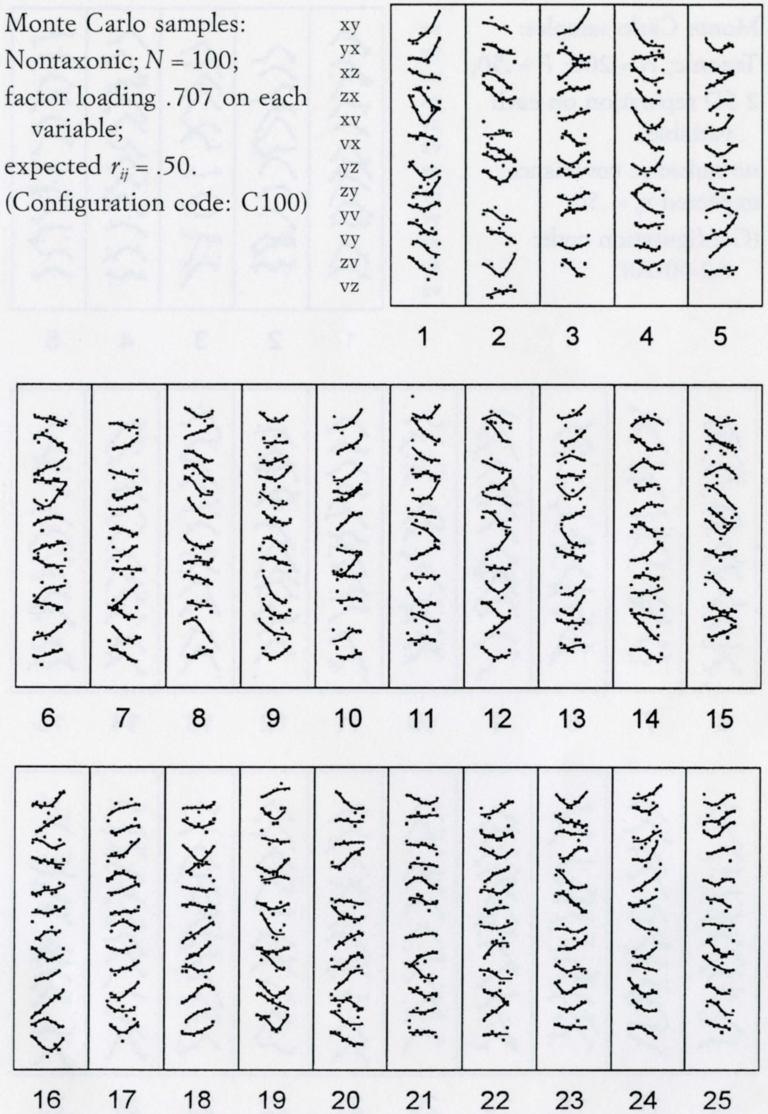
[1]Sample size. [2]Base rate. [3]Amount of separation, same for all four variables unless given otherwise. [4]Same for all variables in taxon and in complement groups unless given otherwise. [5]A filename coding used by the authors for identification of the Monte Carlo samples. [6]Same for all variables unless given otherwise.

[1]Sample size. [2]Base rate. [3]Amount of separation, same for all four variables unless given otherwise. [4]Same for all variables in taxon and in complement groups unless given otherwise. [5]A filename coding used by the authors for identification of the Monte Carlo samples. [6]Same for all variables unless given otherwise.



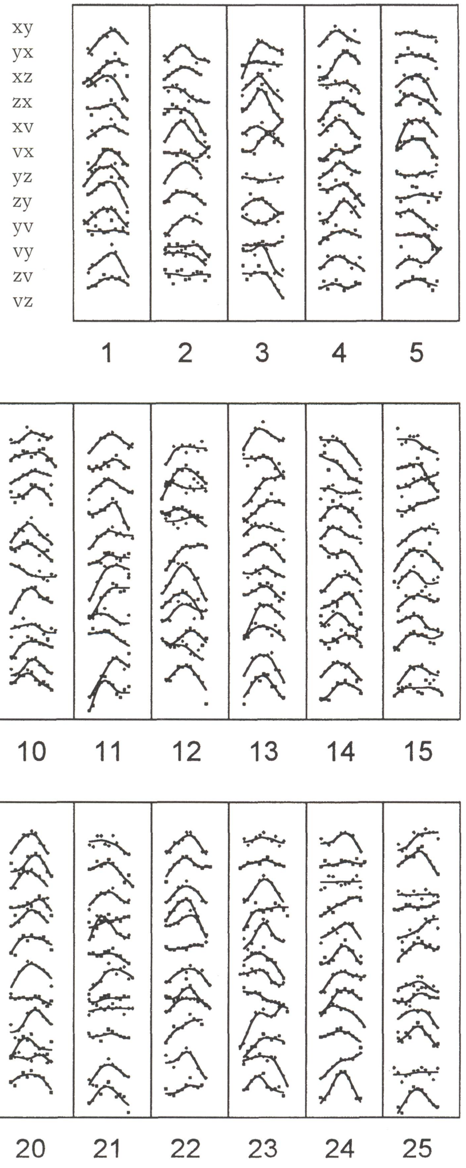
Monte Carlo samples:
Taxonic; $N = 100$; $P = .50$;
2 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .50$.
(Configuration code: A1-50-20)



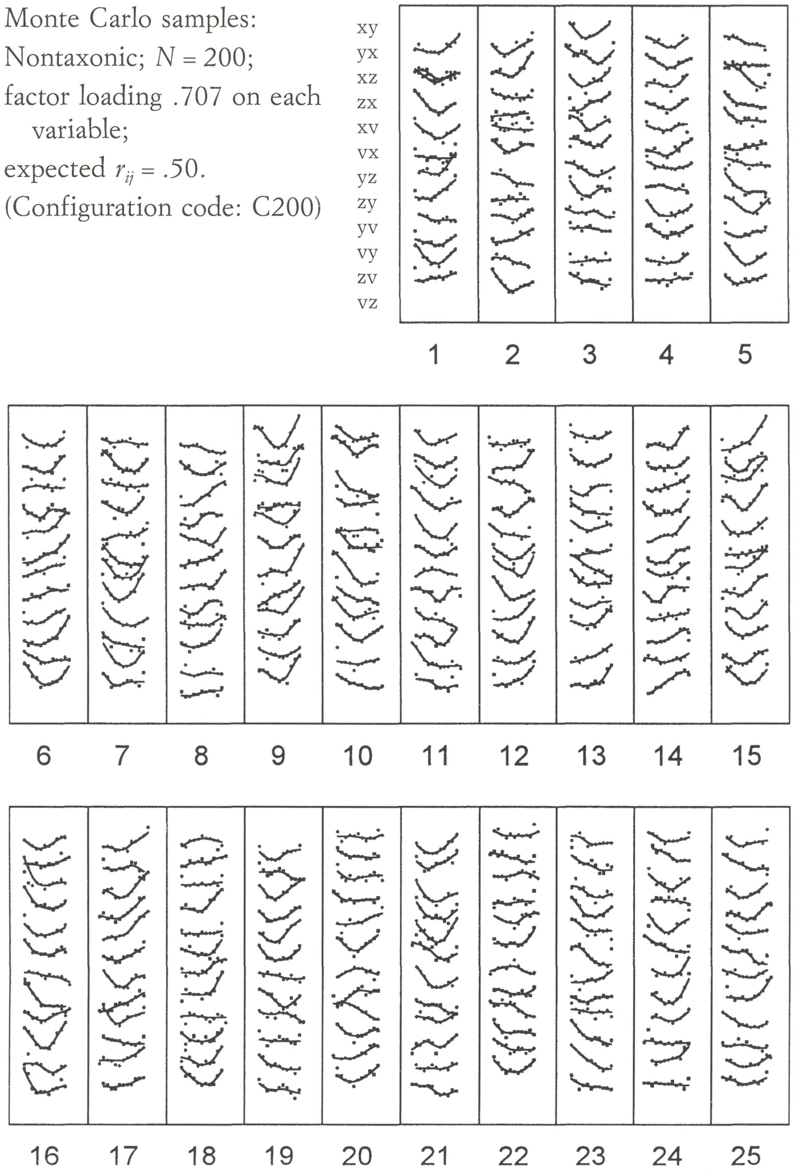
Monte Carlo samples:
Nontaxonic; $N = 100$;
factor loading .707 on each variable;
expected $r_{ij} = .50$.
(Configuration code: C100)

MAMBAC: Sample size: N = 200

Monte Carlo samples:
Taxonic; $N = 200$; $P = .50$;
2 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .50$.
(Configuration code: A2-50-20)

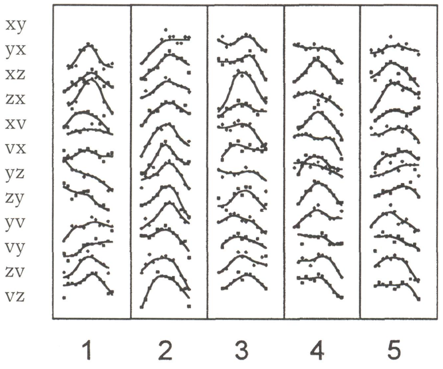


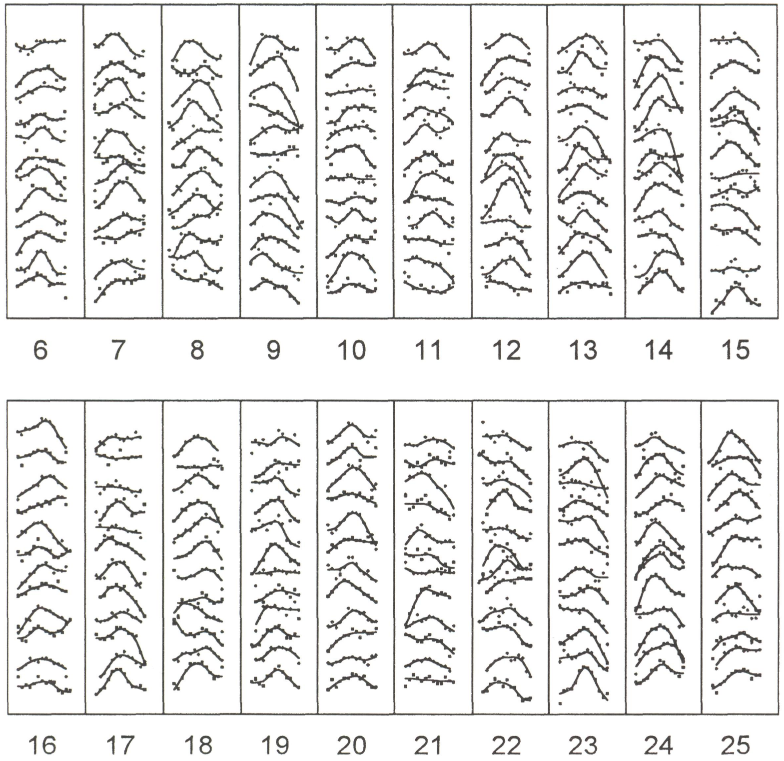
Monte Carlo samples:
Nontaxonic; $N = 200$;
factor loading .707 on each variable;
expected $r_{ij} = .50$.
(Configuration code: C200)



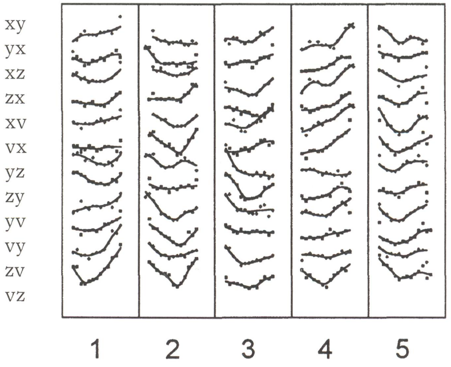
MAMBAC: Sample size: N = 300

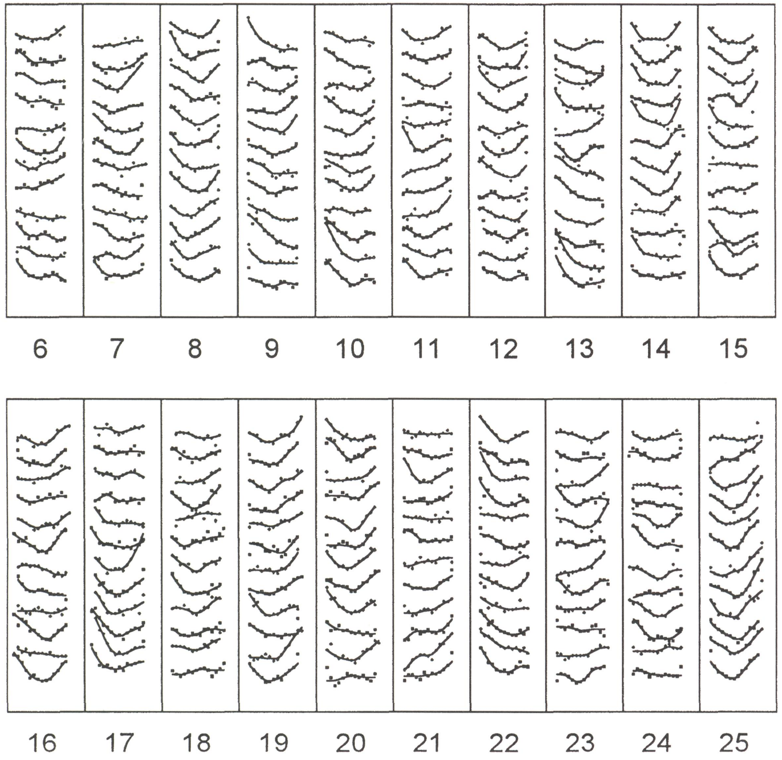
Monte Carlo samples:
Taxonic; $N = 300$; $P = .50$;
2 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .50$.
(Configuration code: A3-50-20)





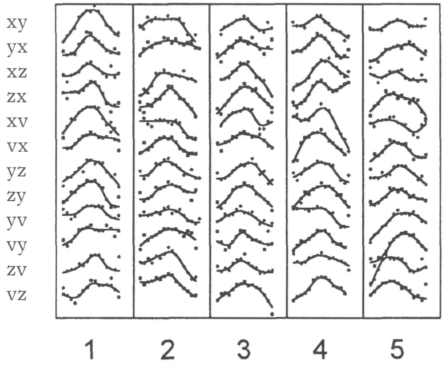
Monte Carlo samples:
Nontaxonic; $N = 300$;
factor loading .707 on each variable;
expected $r_{ij} = .50$.
(Configuration code: C300)

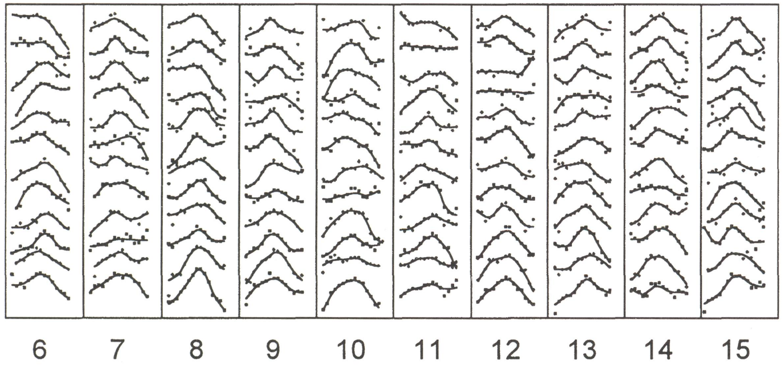


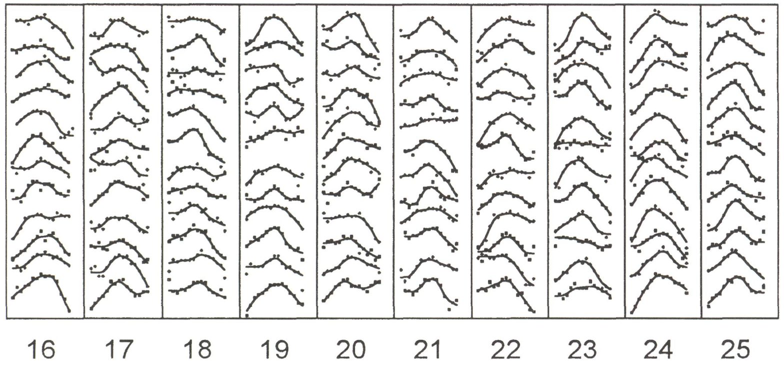


MAMBAC: Sample size: N =600

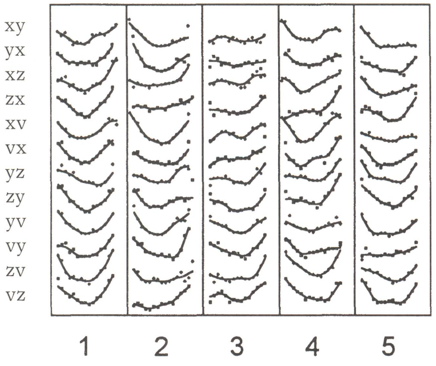
Monte Carlo samples:
Taxonic; $N = 600$; $P = .50$;
2 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .50$.
(Configuration code: A6-50-20)

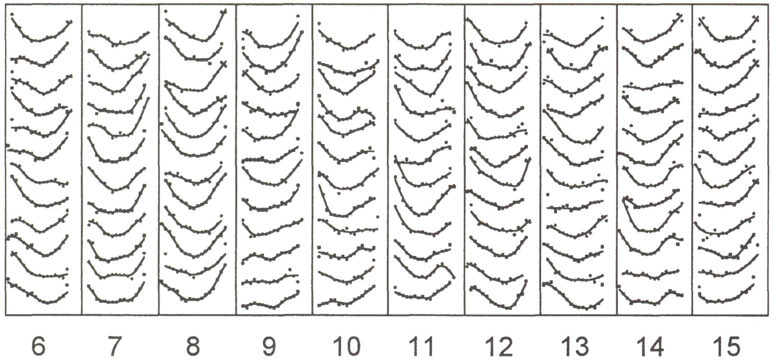


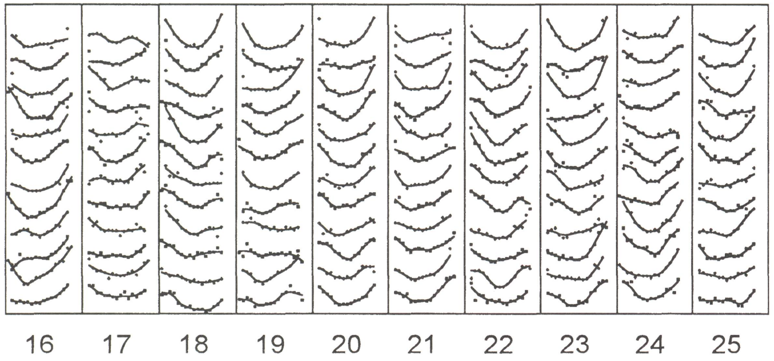




Monte Carlo samples:
Nontaxonic; $N = 600$;
factor loading .707 on each variable;
expected $r_{ij} = .50$.
(Configuration code: C600)

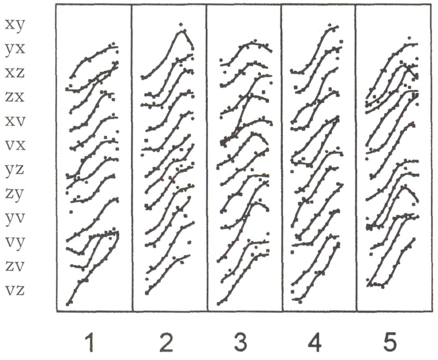


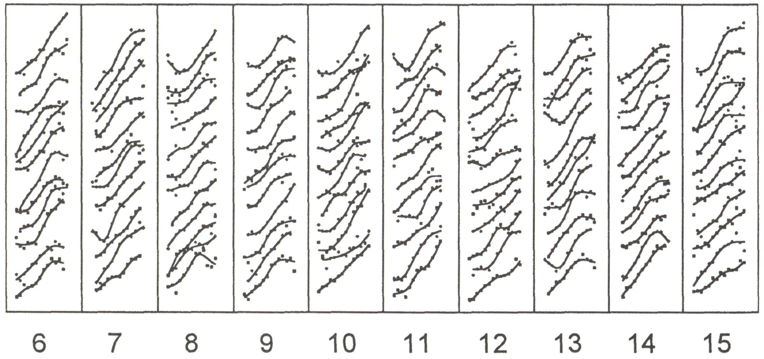


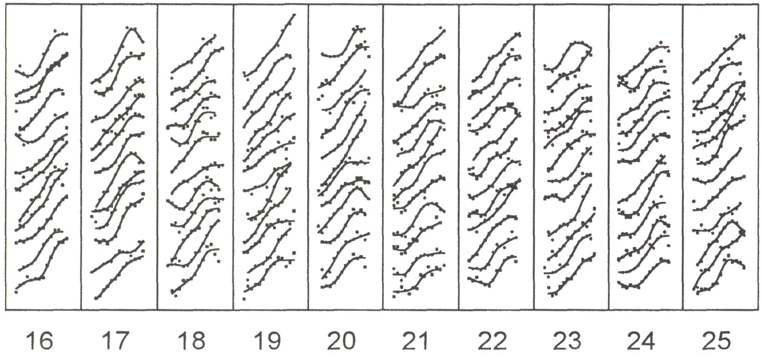


MAMBAC: Base rate: P = .25 (N = 300)

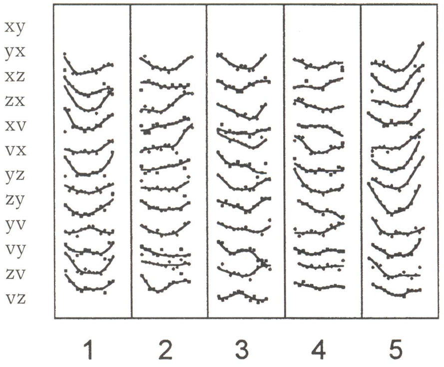
Monte Carlo samples:
Taxonic; $N = 300$; $P = .25$;
2 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .43$.
(Configuration code: A3-25-20)

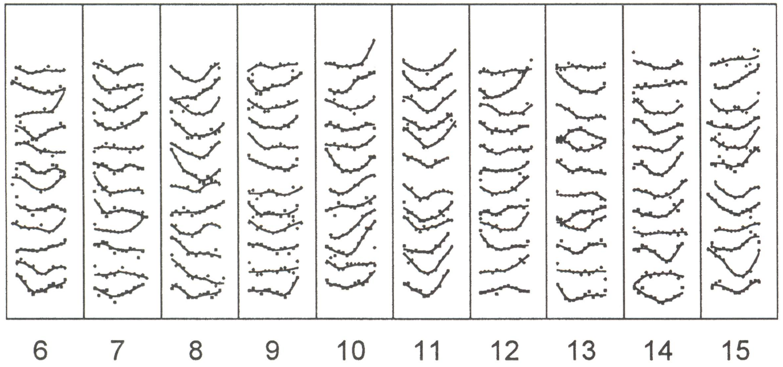


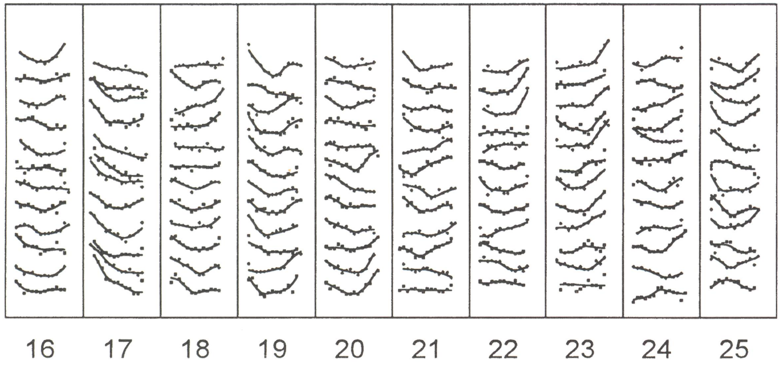




Monte Carlo samples:
Nontaxonic; $N = 300$;
factor loading .66 on each variable;
expected $r_{ij} = .43$.
(Configuration code: F300)







MAMBAC: Base rate: P = .25 (N = 600)

Monte Carlo samples:

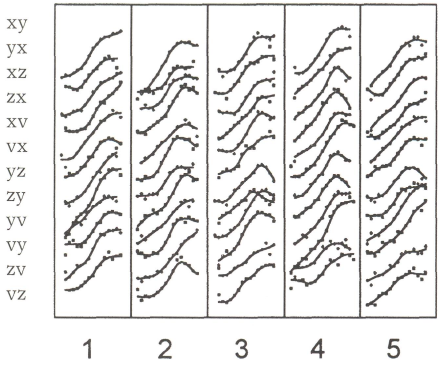
Taxonic; *N* = 600; *P* = .25;

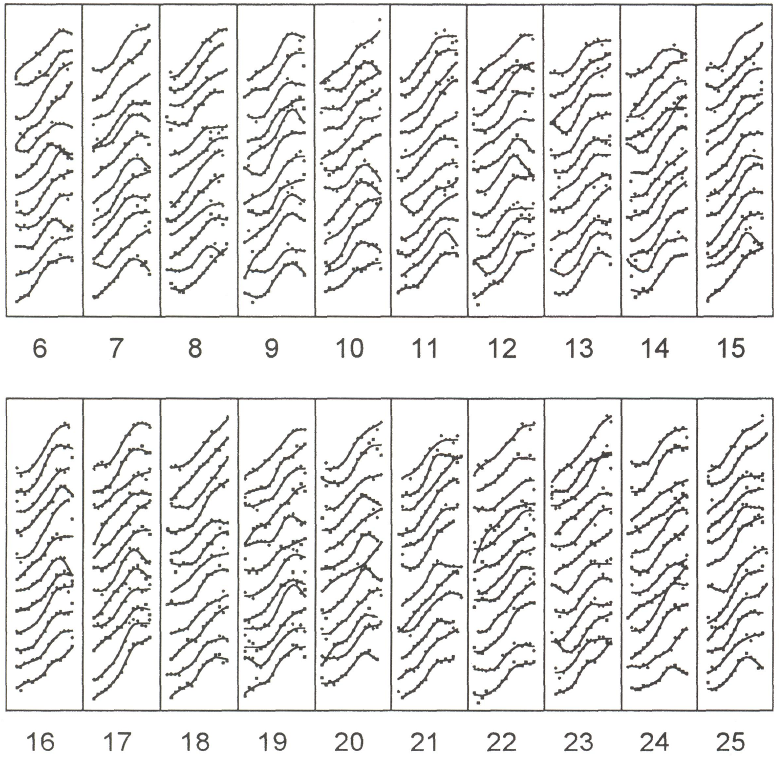
2 *SD* separation on each variable;

no nuisance covariance;

expected $r_{ij} = .43$.

(Configuration code: A6-25-20)





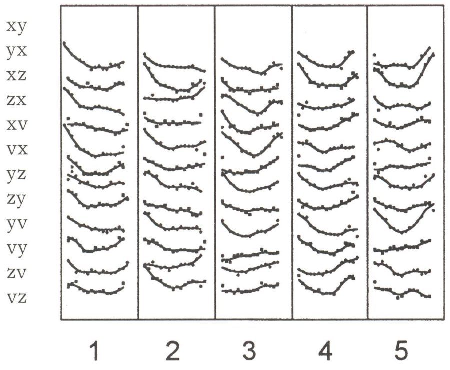
Monte Carlo samples:

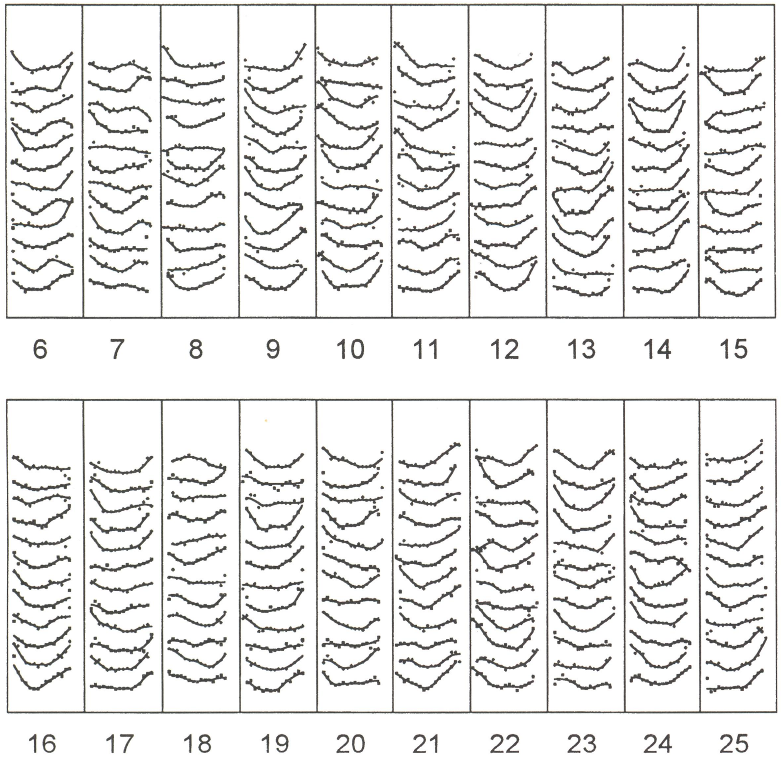
Nontaxonic; *N* = 600;

factor loading .66 on each variable;

expected $r_{ij} = .43$.

(Configuration code: F600)





MAMBAC: Base rate: P = .10 (N = 300)

Monte Carlo samples:

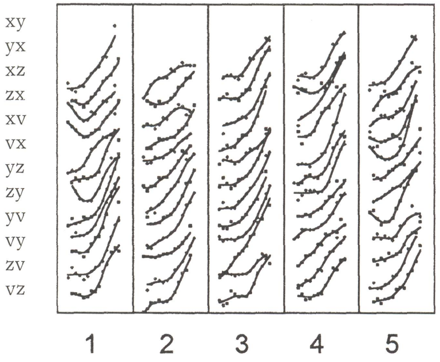
Taxonic; $N = 300$; $P = .10$;

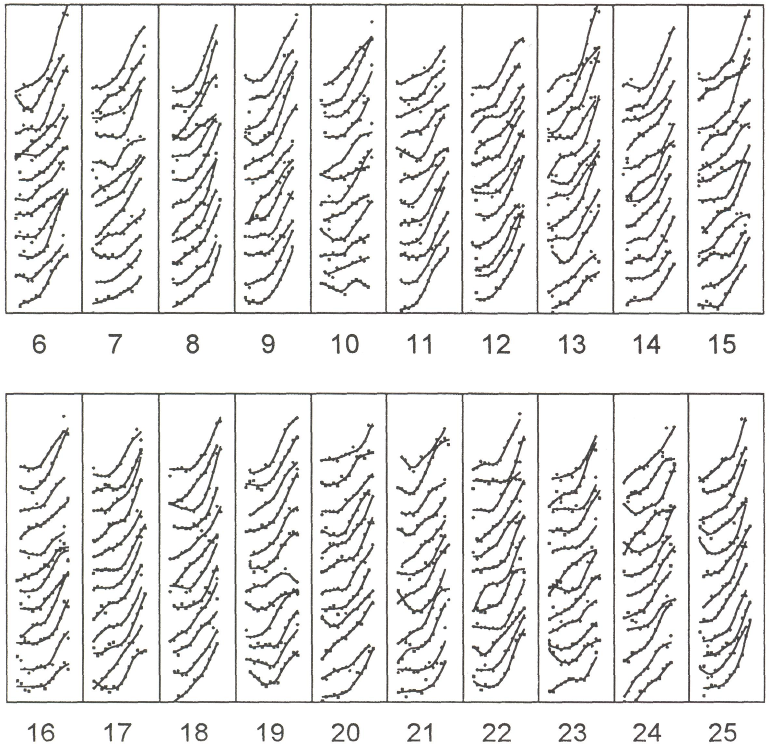
2 *SD* separation on each variable;

no nuisance covariance;

expected $r_{ij} = .26$.

(Configuration code: A3-10-20)





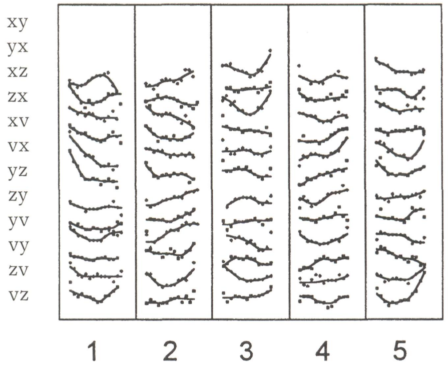
Monte Carlo samples:

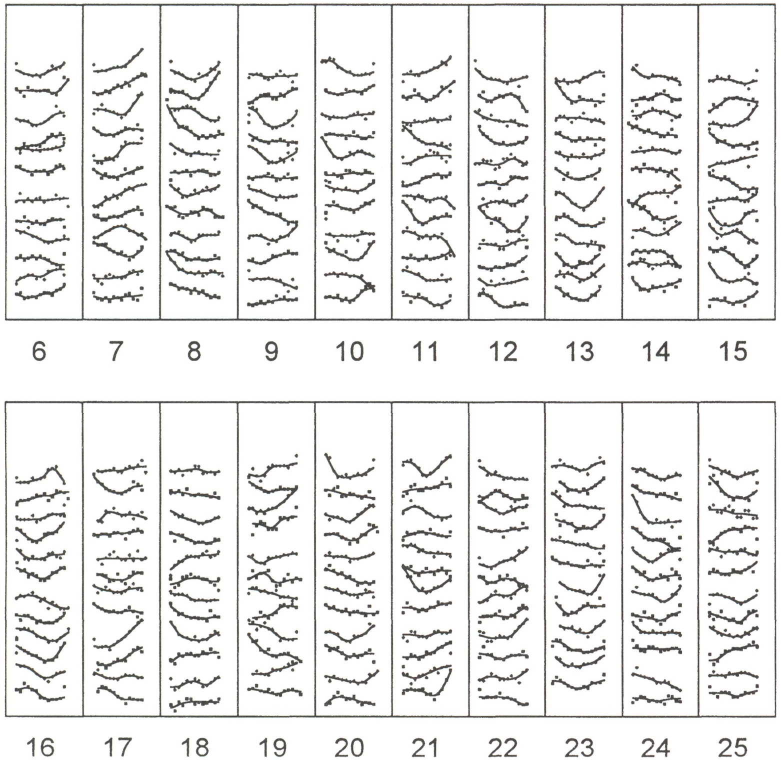
Nontaxonic; $N = 300$;

factor loading .51 on each variable;

expected $r_{ij} = .26$.

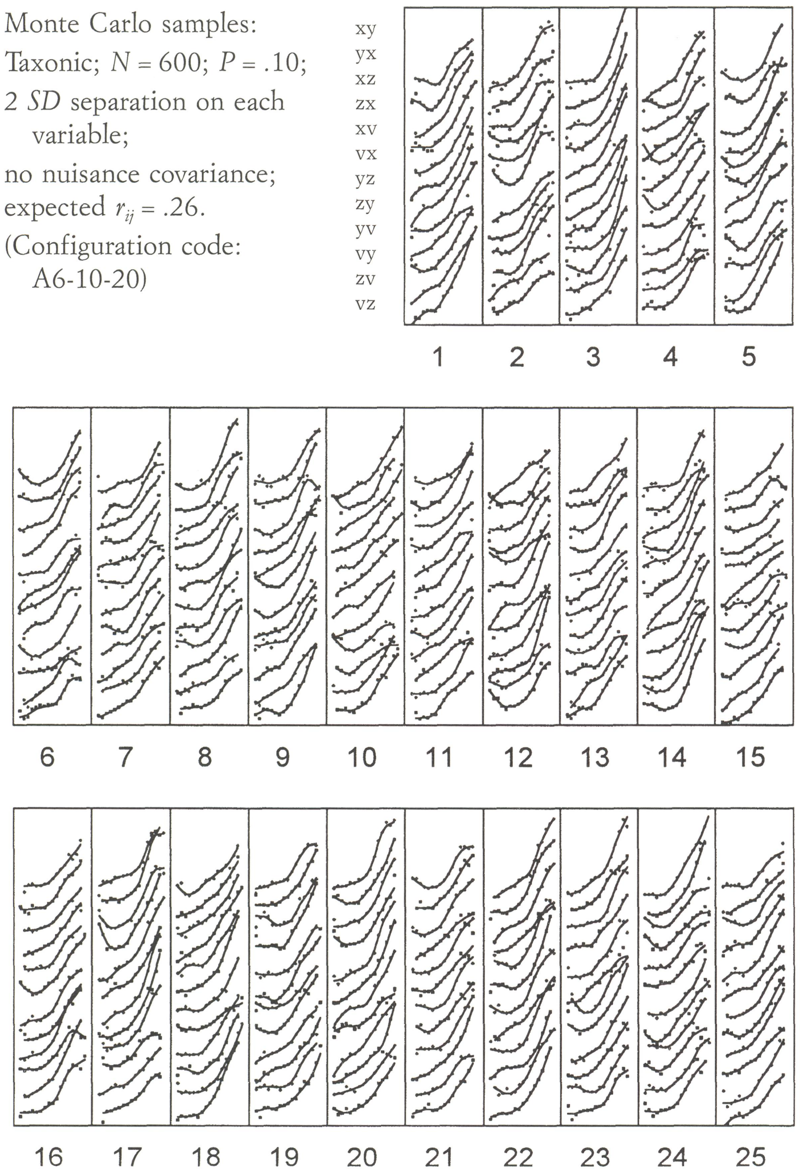
(Configuration code: E300)



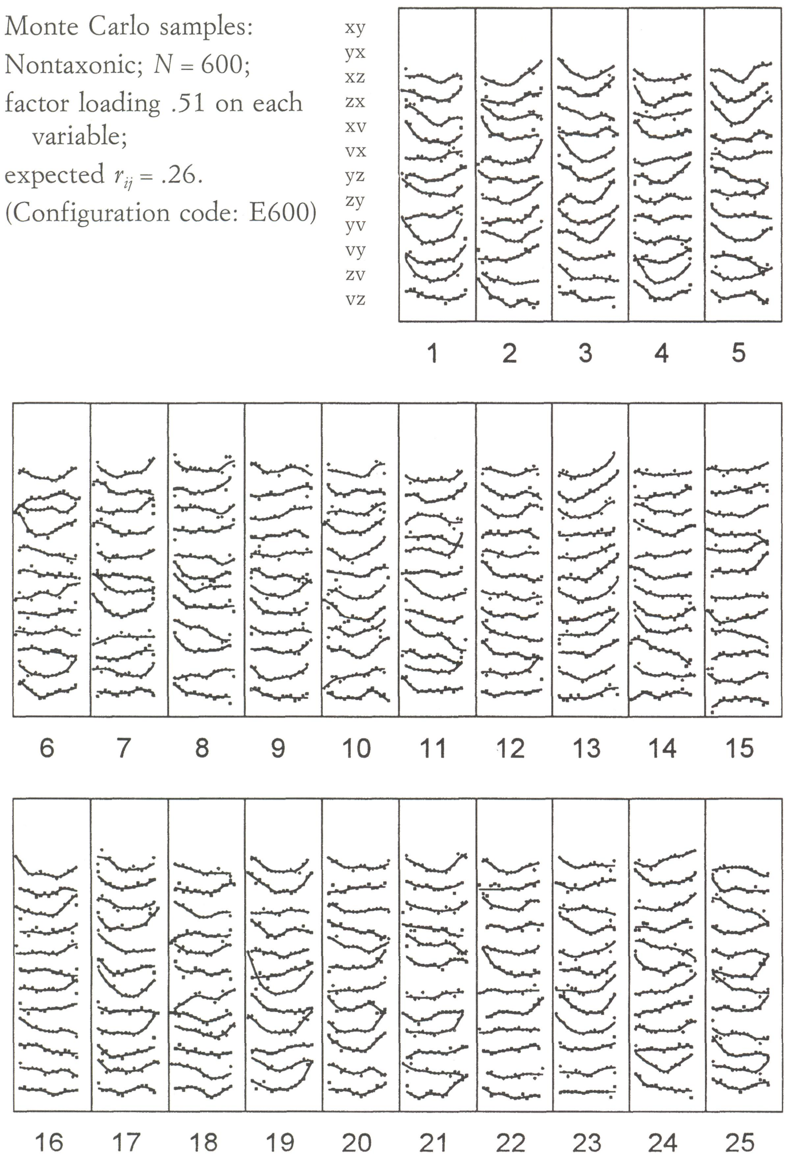


MAMBAC: Base rate: P = .10 (N = 600)

Monte Carlo samples:
Taxonic; $N = 600$; $P = .10$;
2 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .26$.
(Configuration code: A6-10-20)

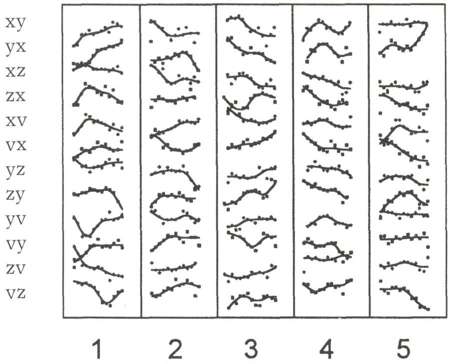


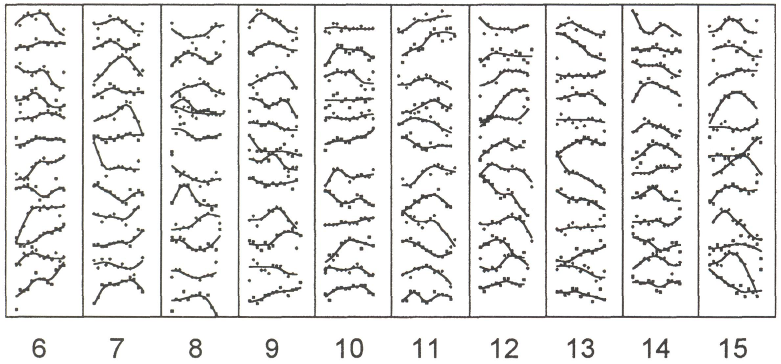
Monte Carlo samples:
Nontaxonic; $N = 600$;
factor loading .51 on each variable;
expected $r_{ij} = .26$.
(Configuration code: E600)

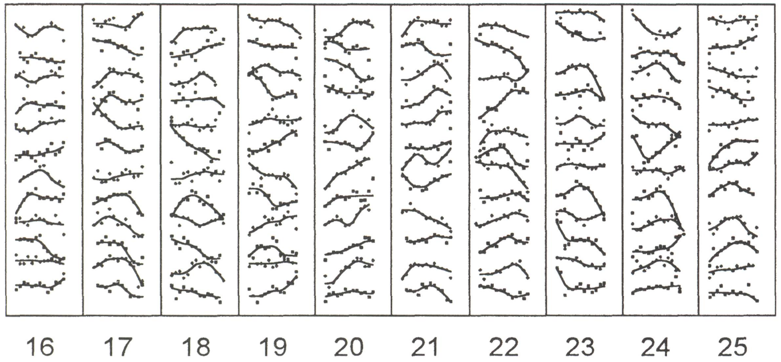


MAMBAC: Reduced validity: separation *SD* = 1.5 (N = 300)

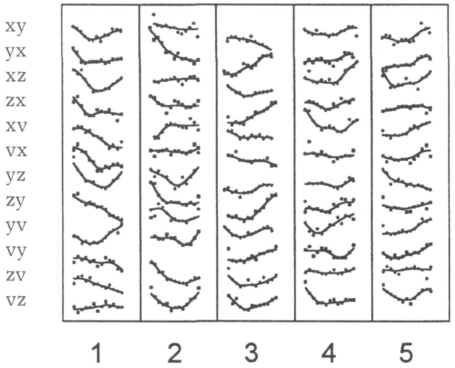
Monte Carlo samples:
Taxonic; $N = 300$; $P = .50$;
1.5 *SD* separation on each variable;
no nuisance covariance;
expected $r_{ij} = .36$.
(Configuration code: A3-50-15)

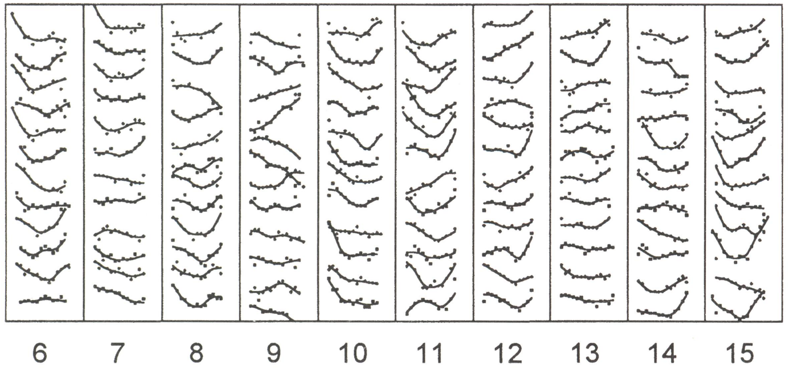


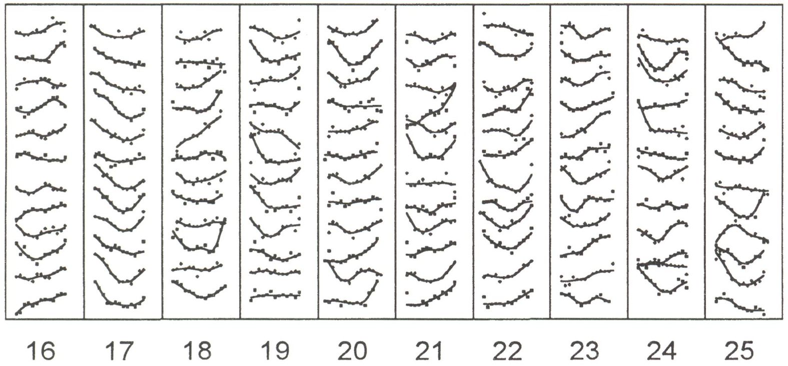




Monte Carlo samples:
Nontaxonic; $N = 300$;
factor loading .60 on each variable;
expected $r_{ij} = .36$.
(Configuration code: B300)

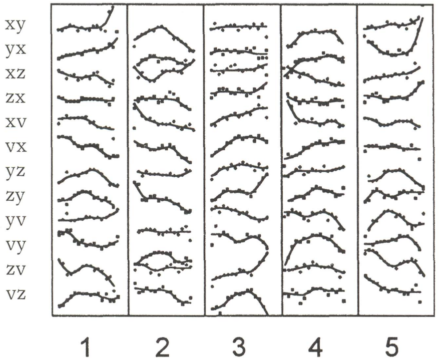


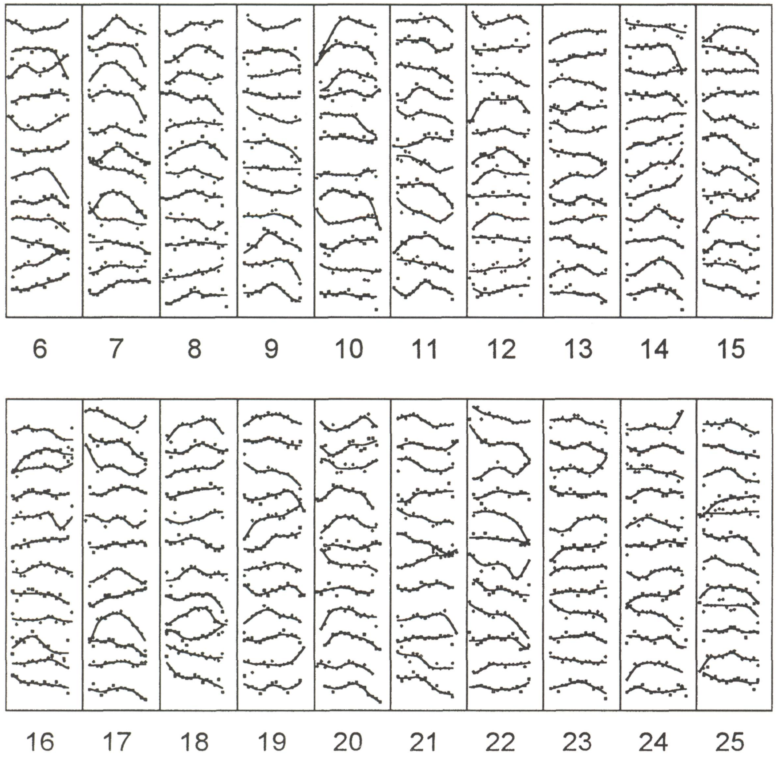




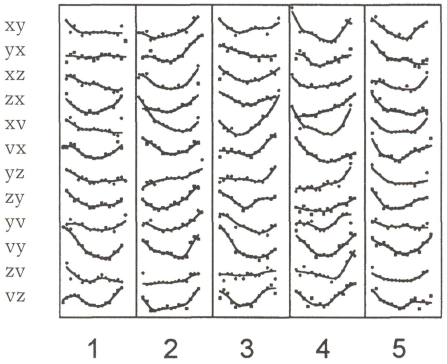
MAMBAC: Reduced validity: separation *SD* = 1.5 (N = 600)

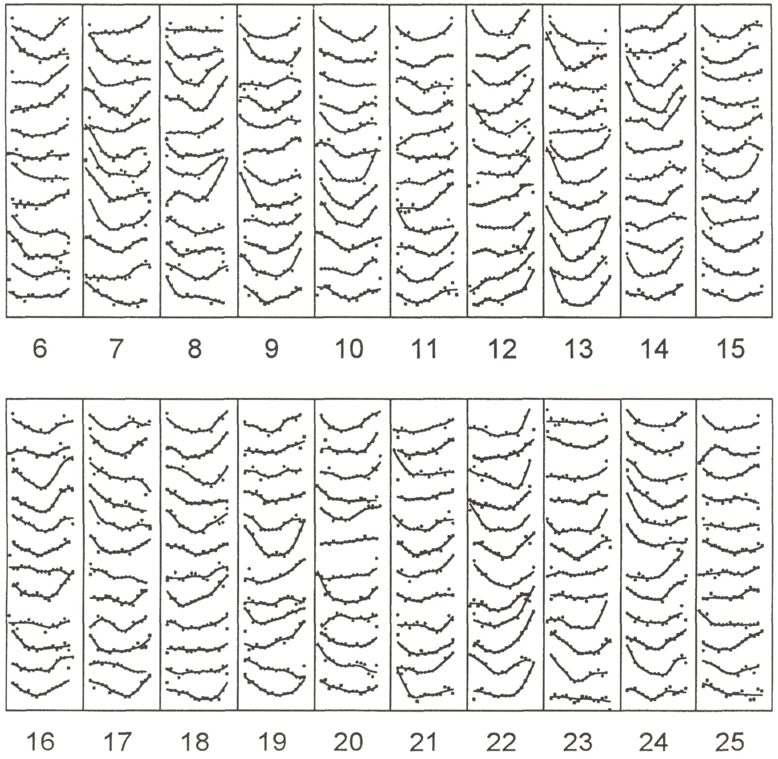
Monte Carlo samples:
Taxonic; *N* = 600; *P* = .50;
1.5 *SD* separation on each
variable;
no nuisance covariance;
expected $r_{ij} = .36$.
(Configuration code:
A6-50-15)





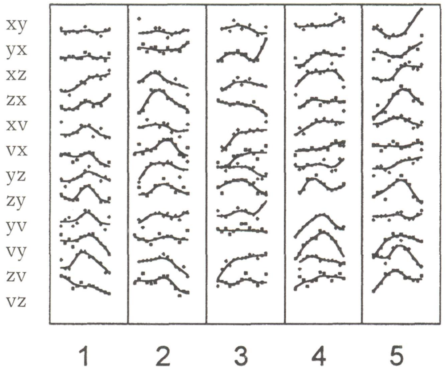
Monte Carlo samples:
Nontaxonic; *N* = 600;
factor loading .60 on each
variable;
expected $r_{ij} = .36$.
(Configuration code: B600)

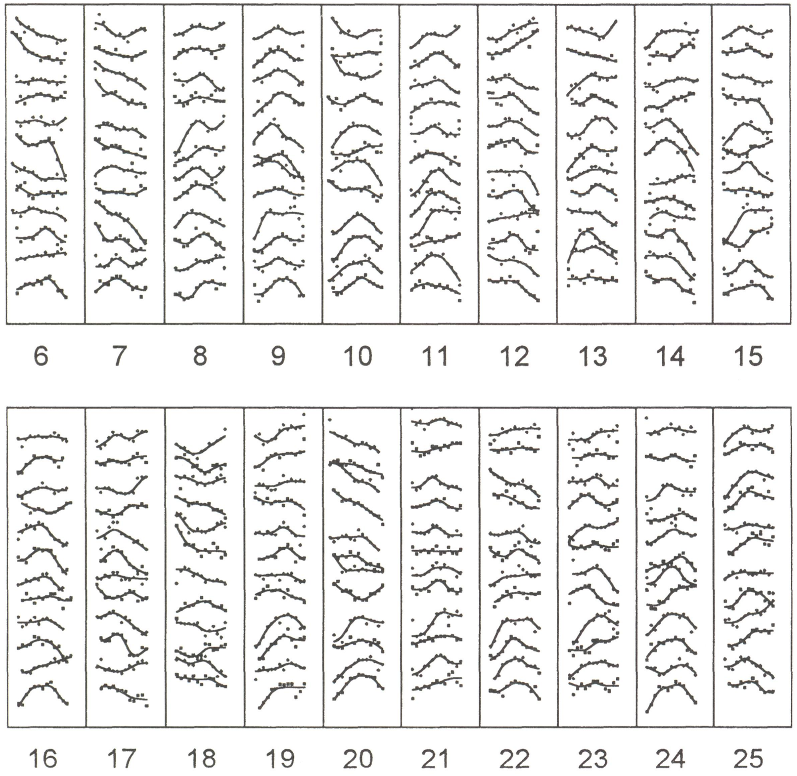




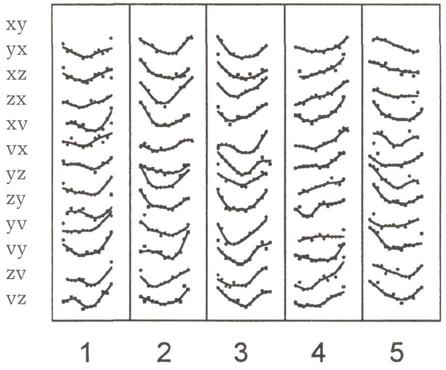
MAMBAC: Nuisance covariance (N = 300)

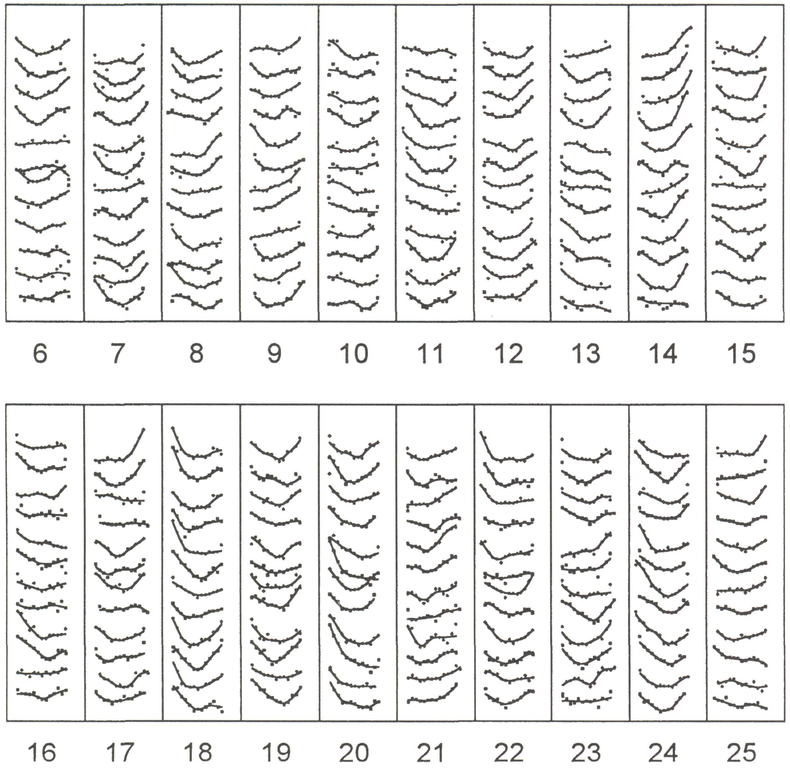
Monte Carlo samples: Taxonic; $N = 300$; $P = .50$; 2 *SD* separation on each variable; factor loadings (to produce nuisance covariance) on $x = .70$, $y = .50$, $z = .40$, $v = .20$; expected $r_{xy} = .68$, $r_{xz} = .64$, $r_{xv} = .57$, $r_{yz} = .60$, $r_{yv} = .55$, $r_{zv} = .54$. (Configuration code: N3-50-20)





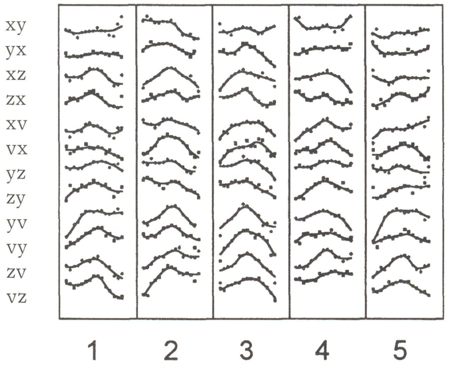
Monte Carlo samples: Nontaxonic; $N = 300$; factor loadings on $x = .84$, $y = .79$, $z = .77$, $v = .69$; expected $r_{xy} = .68$, $r_{xz} = .64$, $r_{xv} = .57$, $r_{yz} = .60$, $r_{yv} = .55$, $r_{zv} = .54$. (Configuration code: N300)

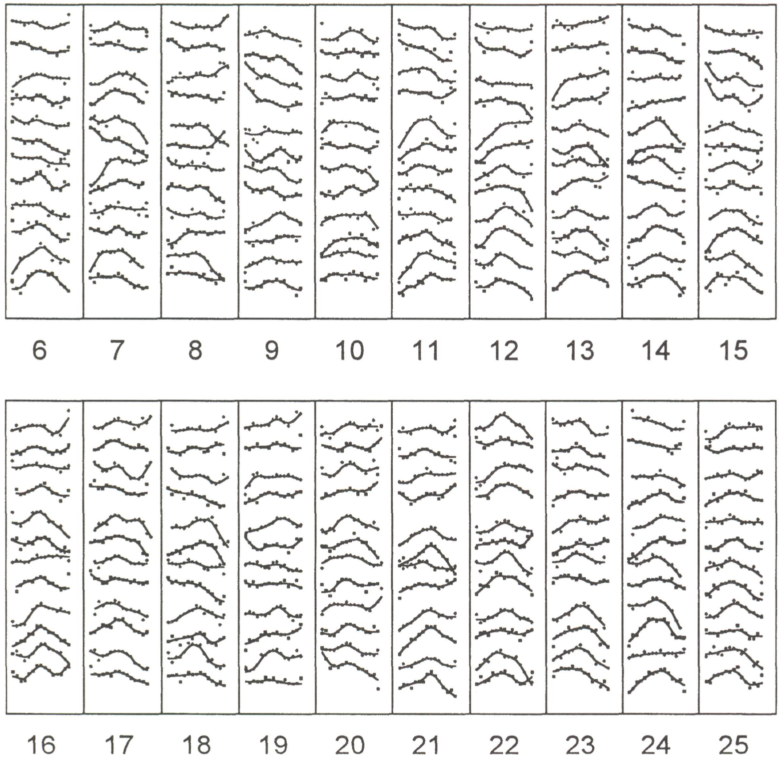




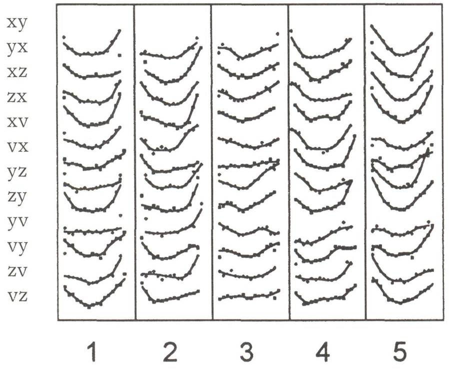
MAMBAC: Nuisance covariance (N = 600)

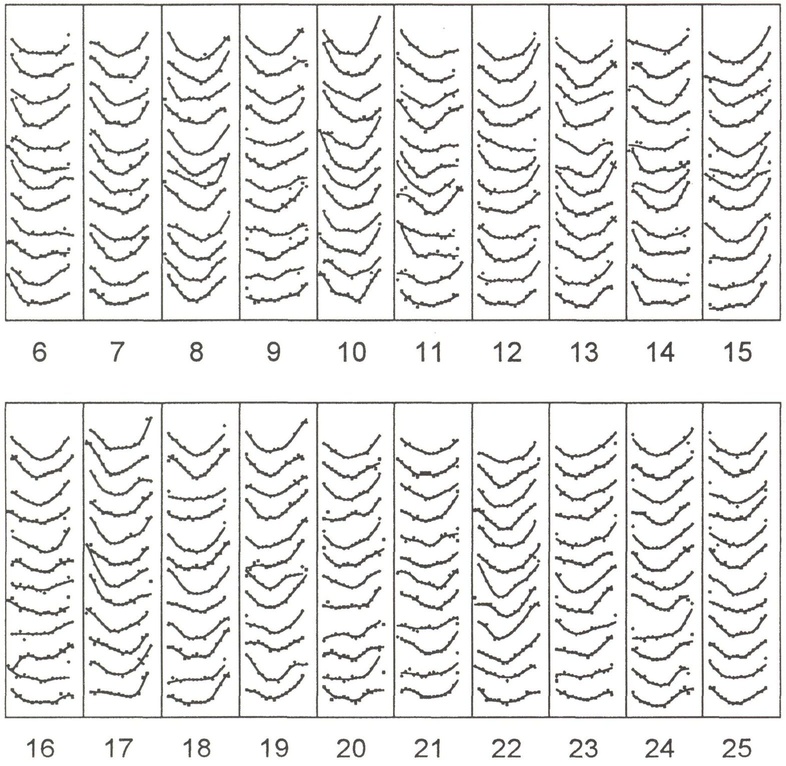
Monte Carlo samples: Taxonic; $N = 600$; $P = .50$; 2 *SD* separation on each variable; factor loadings (to produce nuisance covariance) on $x = .70$, $y = .50$, $z = .40$, $v = .20$; expected $r_{xy} = .68$, $r_{xz} = .64$, $r_{xv} = .57$, $r_{yz} = .60$, $r_{yv} = .55$, $r_{zv} = .54$. (Configuration code: N6-50-20)





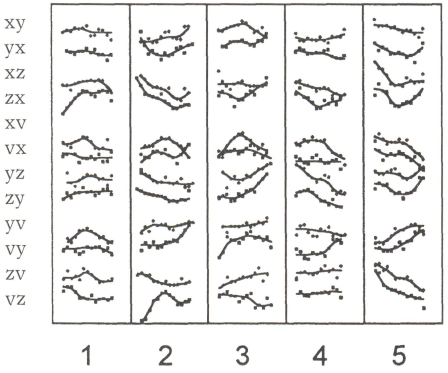
Monte Carlo samples: Nontaxonic; $N = 600$; factor loadings on $x = .84$, $y = .79$, $z = .77$, $v = .69$; expected $r_{xy} = .68$, $r_{xz} = .64$, $r_{xv} = .57$, $r_{yz} = .60$, $r_{yv} = .55$, $r_{zv} = .54$. (Configuration code: N600)

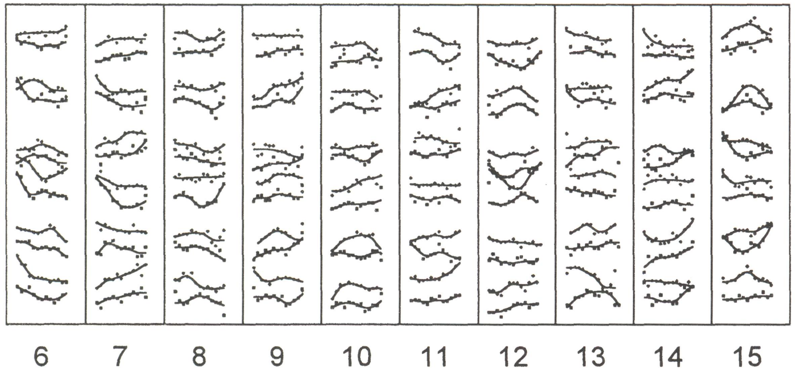


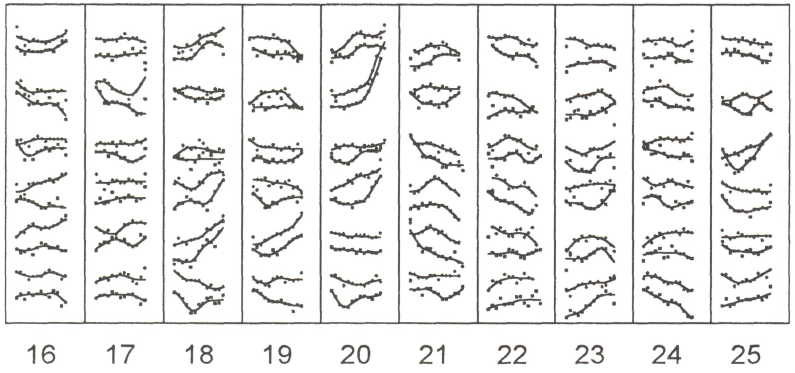


MAMBAC: Reduced validity and nuisance covariance (N = 300)

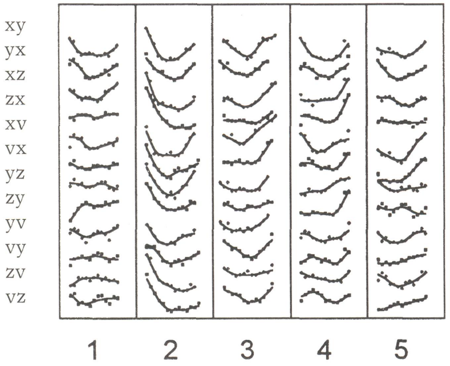
Monte Carlo samples: Taxonic; $N = 300$; $P = .50$; separations on variables $x = 2.00$ SD, $y = 1.75$ SD, $z = 1.50$ SD, $v = 1.25$ SD; factor loadings (to produce nuisance covariance) on $x = .70$, $y = .50$, $z = .40$, $v = .20$; expected $r_{xy} = .65$, $r_{xz} = .58$, $r_{xv} = .46$, $r_{yz} = .52$, $r_{yv} = .41$, $r_{zv} = .37$. (Configuration code: D3-50-v1)

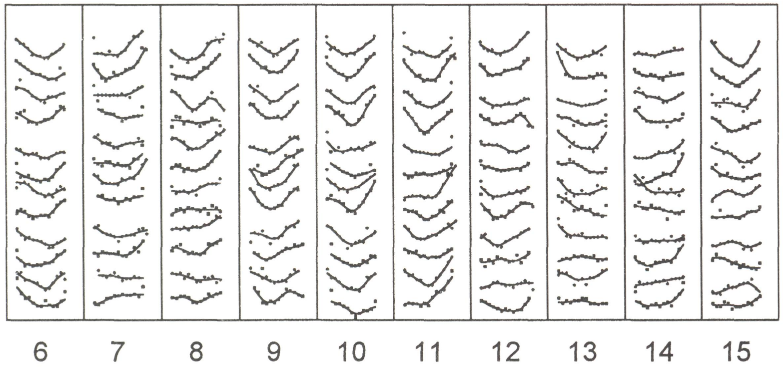


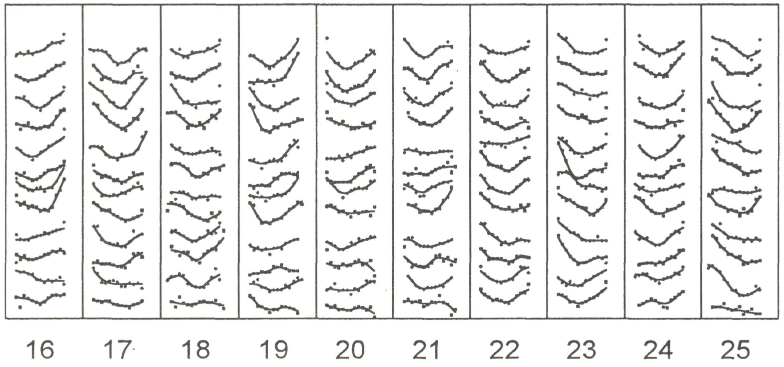




Monte Carlo samples: Nontaxonic; $N = 300$; factor loadings on $x = .85$, $y = .76$, $z = .68$, $v = .54$; expected $r_{xy} = .65$, $r_{xz} = .58$, $r_{xv} = .46$, $r_{yz} = .52$, $r_{yv} = .41$, $r_{zv} = .37$. (Configuration code: D300)

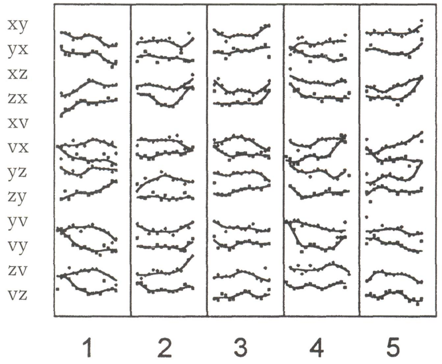


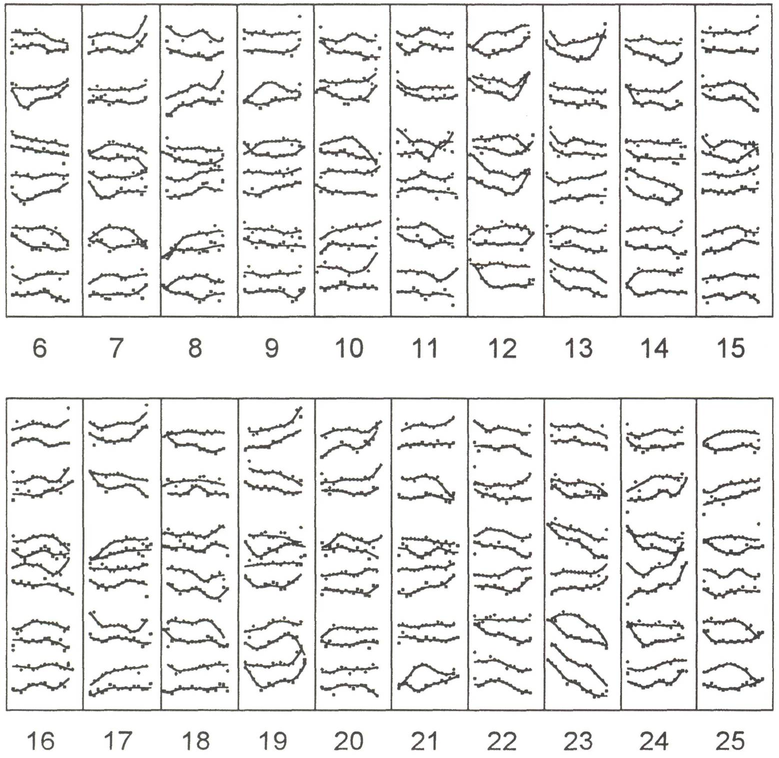




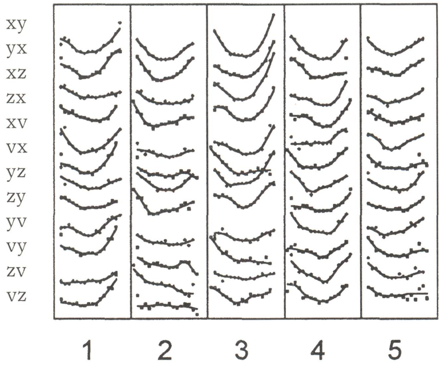
MAMBAC: Reduced validity and nuisance covariance (N = 600)

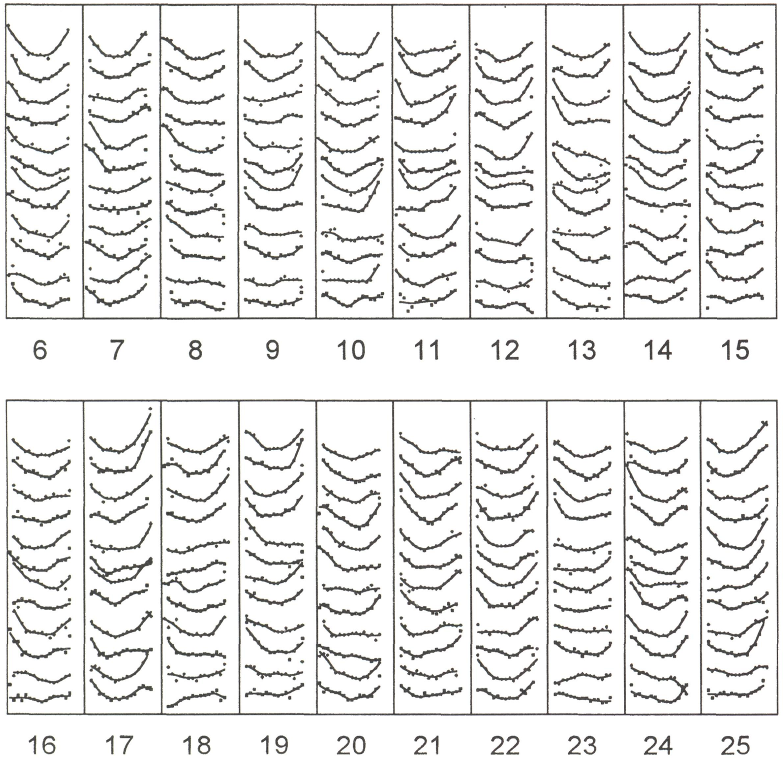
Monte Carlo samples: Taxonic; $N = 600$; $P = .50$; separations on variables $x = 2.00$ *SD*, $y = 1.75$ *SD*, $z = 1.50$ *SD*, $v = 1.25$ *SD*; factor loadings (to produce nuisance covariance) on $x = .70$, $y = .50$, $z = .40$, $v = .20$; expected $r_{xy} = .65$, $r_{xz} = .58$, $r_{xv} = .46$, $r_{yz} = .52$, $r_{yv} = .41$, $r_{zv} = .37$. (Configuration code: D6-50-v1)





Monte Carlo samples: Nontaxonic; $N = 600$; factor loading on $x = .85$, $y = .76$, $z = .68$, $v = .54$; expected $r_{xy} = .65$, $r_{xz} = .58$, $r_{xv} = .46$, $r_{yz} = .52$, $r_{yv} = .41$, $r_{zv} = .37$. (Configuration code: D600)





[END of Appendix C]

APPENDIX D

VISUAL SORTING OF MAMBAC CURVES

Sorting Panels of Curves

People were asked to sort panels of curves from nontaxonic samples and taxonic samples with different base rates. Panels identical to those in Appendix C (configurations: A6-50-20, A6-25-20, A6-10-20, C600, E600, F600, p. 1122ff) were cut out and coded with a red line across the bottom of each panel, a blue stripe along the left side, and yellow on the upper right corner; this color coding was to ensure that panels would be correctly oriented by the sorter. Each panel was given a unique 4-digit code number on the back for later identification. Taxonic configurations with base rates of .50, .25, and .10 were used; otherwise all had 2 *SD* separation on each variable, no nuisance covariance, and $N = 600$. The nontaxonic panels were from configurations with expected correlations between the variables comparable to that of the taxonic samples.

There were 150 panels in all (3 taxonic and 3 nontaxonic configurations, times 25 samples of each configuration). We thought this might be too many to ask people to sort in a single sitting, so the panels were divided into two sets, 37 taxonic and 38 nontaxonic panels in one set, 38 taxonic and 37 nontaxonic panels in the second set. A person could sort just one set or both of them.

All preparation and coding was done by the second author. The first author (Sorter 13 in the table) sorted a set to check that the instruction sheet was self-explanatory, which it seemed to be. Next, a secretarial assistant (Sorter 1 in the table) who knew nothing about this work was asked to sort the panels. The second author was present and afterward gave the assistant instructions for administering the task to others and recording identification numbers on protocol sheets. After that, neither author was present during sortings. The assistant gathered sortings from ten others, sometimes allowing people to take the sets and do the task on their own. In addition, duplicate sets of the panels were sent to some persons in other states.

Sorters were shown an instruction sheet with brief descriptions of how the two groups of curves should look and examples of panels from samples of $N = 300$ (specific samples: A3-50-20.20, A3-25-20.20, A3-10-20.11, C300.20, E300.11, and F300.20). They were asked to sort the mixed pile of panels into one of two groups based on the curve shapes, *Group P* (for "peaked") or *Group D* (for "dish-like"). The instruction sheet is reproduced in Figure D-1.

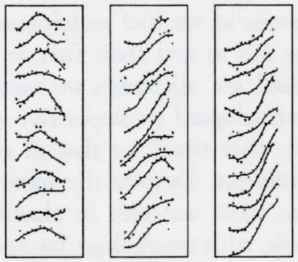
There were 12 sorters with no advanced training in psychology or other areas that might give them special expertise at this task, although one of them (Sorter 9) had sorted single MAMBAC curves several years before. Of

Try to sort the panels into their correct groups.

Group P curves tend to have a pronounced "peak" in them.

Sometimes they are higher in the middle, lower on the ends. But the peak may be moved toward the right, sometimes so much so that the curve goes up but doesn't come down again.

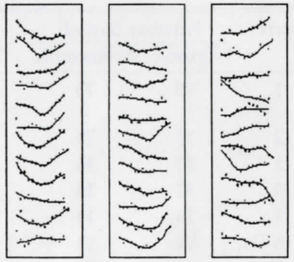
Examples of Panels From Group P



Group D curves tend to be "dish-like."

They are lower in the middle, higher on the ends, and more or less symmetrical.

Examples of Panels From Group D



Spread the panels out on a table. *It is very important to have the panels right side up when you look at them.* To help you orient the panels correctly,

the blue edge should always be on the left side of the panel,
the red edge is at the bottom,
and the upper right corner is yellow.

Not all of the curves in a panel have to look alike; just try to decide which group the panel probably came from—P or D. Look at the examples on this page whenever you are unsure. There can be different numbers of panels in the groups. If you still have trouble deciding about a given panel, please try to make a "best guess" and sort the panel into that group.

Put the sorted panels into the correct file envelope.

FIG. D-1. Instructions for sorting MAMBAC curves five sorters with backgrounds in psychology, only two (Sorters 13 and 14) knew how the curves are generated and had seen examples of them previously; Sorter 17 thought he may have seen examples of single MAMBAC curves a few years before but was not certain. The task turned out to be not as onerous as we had anticipated. Sorters took an average of 12 minutes (range 4 to 19) to sort their first set, 9 minutes (range 3 to 20) when they sorted a second set. Although we wanted to stress accuracy rather than speed, people often adopted a competitive attitude, commenting that they wanted to "beat their first time" or that of other sorters. They were usually eager to sort a second set. Despite the sometimes game-like conditions, the "naive" sorters were 98% accurate in classifying both the taxonic and nontaxonic panels. Those with psychology backgrounds did even better, as may be seen in Table D-1.

TABLE D-1
BACKGROUNDS OF SORTERS AND NUMBER OF PANELS SORTED AND MISCLASSIFIED BY EACH PERSON

Sorter	Number Sorted[1]		Misclassifications		Education and Work Background
	Taxonic	Nontaxonic	Taxonic	Nontaxonic	
1	75	75	0	1	BA International Studies, Secretary/manager
2	75	75	0	3	College, Arts Administration
3	35	36	0	3	BA Communications/Disc jockey
4	37	38	7	1	College, Graphics artist
5	73	75	0	0	BA English, Dance artist
6	74	73	0	0	BA Sociology, Teacher
7	75	75	0	0	BA History, Entrepreneur
8	75	75	0	1	BA Latin, MA Management, Admin. assistant
9	75	75	4	3	M.A. English, College teacher (retired)
10	75	74	0	2	BA Liberal Arts, Homemaker
11	74	75	0	5	High School, Bookkeeper/secretary
12	38	37	1	0	College, Communications, Marketing-Radio
Σ	781	783	12	19	
	% Correct sorts:		98.46	97.57	
13*	37	38	0	0	Ph.D. Psychologist
14*	75	73	1	0	Ph.D. Psychologist
15*	75	74	0	0	Ph.D. Psychologist
16	74	75	0	2	Ph.D. Psychologist
17	75	75	0	0	Graduate student, Clinical psychology
Σ	336	335	1	2	
	% Correct Sorts:		99.70	99.40	

[1] If an individual sorted both sets of panels, the totals should be 75 taxonic and 75 nontaxonic samples. Someone who sorted only one set should have 75 total (taxonic plus nontaxonic) panels. Smaller numbers are due to panels having gotten stuck in envelopes or otherwise misplaced, or to misrecording of the code numbers on the backs of them.
*These sorters later sorted the curves by pairs.

Panels from taxonic samples with a base rate of .10 and from nontaxonic samples with lower expected correlations between the variables were misclassified more often than other configurations (see Table D-2).

TABLE D-2
NUMBER OF TIMES EACH SAMPLE WAS MISCLASSIFIED BY SORTER

Sample	Taxonic			Nontaxonic		
	$P = .50$	$P = .25$	$P = .10$	$r_{ij} = .50$	$r_{ij} = .43$	$r_{ij} = .26$
1						
2						2
3			1	2		1
4			2*	1		
5			1			1
6	1		1			1
7				1	2	1
8		1	1			
9						
10						
11	1					
12	1					
13						
14					2*	
15						
16					1	
17						
18						1
19						
20				1		
21			1	1		
22						1
23		1	1			
24						1
25			1			1*
Totals	3	2	9	6	5	10

*These samples were misclassified (once each) by sorters with backgrounds in psychology.

We conclude that even persons with no training in psychology (or related areas that might give them an edge) can easily tell whether a panel of 12 MAMBAC curves comes from a taxonic or a nontaxonic distribution.

Sorting Pairs of Curves

Because only two variables are required for MAMBAC, we wanted to see how well graphs with only two curves can be sorted. The second author cut the panels (from taxonic samples with base rates of .50, .25, and .10, and appropriate nontaxonic comparison samples) so that each graph presented to a sorter contained only two curves, each pair of variables used as input/output. Three psychologists who had previously sorted the panels

(Meehl, W. M. Grove, and D. T. Lykken) heroically sorted these 900 two-curve graphs on the basis of curve shape alone. In this equivalent of 900 independent tests of MAMBAC, they made from 5 to 11 misclassifications, a hit rate of 99% by each of them. Their misclassifications are given in Table D-3. The most frequent source of error was confusing nontaxonic curves where there was high correlation between the variables with taxonic curves from samples with low base rate. When correlations are high in a nontaxonic sample, the dish shape is deeper and sometimes is asymmetrically high on the right side (sorters knew that a dish shape high on the left side would not indicate taxonicity). A researcher would be well advised to *consider the correlations between variables* when looking at MAMBAC curves. Two of the three sorters (Meehl being the exception) were working without that knowledge. If correlations are close to .50 (or higher), the peak should be in the middle of a taxonic curve. Only with lower correlations will the taxonic curves be high on the right.

TABLE D-3

PAIRS OF MAMBAC CURVES MISCLASSIFIED[1]

Sample	Taxonic			Nontaxonic		
	$P = .50$	$P = .25$	$P = .10$	$r_{ij} = .50$	$r_{ij} = .43$	$r_{ij} = .26$
4				x, z y, z		
6				x, v		x, y
7				x, z[2]		
8				x, z		
9				x, v		
11	x, y					
12	x, z[3]					
13					y, z	y, v
15				x, z[2]		
16				y, v		
18	x, z[2]					
19				x, z		
20				x, y		
23				y, v		
25				x, y z, v		
Total errors	6	0	0	15	1	2

[1] The curves can be located in Appendix C (pp. 1122-1151).
[2] These curves were misclassified by two sorters.
[3] Misclassified by three sorters.

APPENDIX E

BASE-RATE ESTIMATES FROM TAXONIC SAMPLES

Estimates based on the first and last abscissa cuts are given for all input/output combinations for each taxonic configuration. See Appendix F (p. 1186) for a summary of pseudoestimates generated by the nontaxonic samples. Ordering of configurations in this appendix:

N[1]	Taxonic Configuration				Expected
	p[2]	sep	Factor Loadings[4]	File Code[5]	r_{ij}[6]
100	.50	2.0	0	A1-50-20	.50
200	.50	2.0	0	A2-50-20	.50
300	.50	2.0	0	A3-50-20	.50
600	.50	2.0	0	A6-50-20	.50
300	.25	2.0	0	A3-25-20	.43
600	.25	2.0	0	A6-25-20	.43
300	.10	2.0	0	A3-10-20	.26
600	.10	2.0	0	A6-10-20	.26
300	.50	1.5	0	A3-50-15	.36
600	.50	1.5	0	A6-50-15	.36
300	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N3-50-20	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
600	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N6-50-20	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
300	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D3-50-v1	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$
600	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D6-50-v1	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$

[1] Sample size. [2] Base rate. [3] Amount of separation in *SD* units, same for all four variables unless stated otherwise. [4] Same for all variables in taxon and in complement groups unless stated otherwise. [5] A filename coding used by the authors for identification of the Monte Carlo samples. [6] Same for all variables unless stated otherwise.

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

A1-50-20: true $P = .50$, $N = 100$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) $(\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}})$

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.52	.63	.57	.57	.46	.55	.43	.32	.48	.52	.53	.55	.51	.08	.01	.01
2	.39	.19	.64	.62	.63	.59	.41	.57	.49	.71	.38	.50	.51	.14	.01	.01
3	.59	.62	.54	.39	.56	.61	.56	.60	.54	.53	.57	.54	.55	.06	.05	.05
4	.48	.52	.45	.46	.49	.54	.48	.56	.44	.42	.46	.54	.49	.04	.01	-.01
5	.40	.49	.44	.65	.42	.59	.51	.50	.45	.50	.35	.40	.48	.08	.02	-.02
6	.38	.47	.45	.52	.41	.48	.57	.55	.50	.52	.57	.62	.50	.07	.00	.00
7	.52	.54	.42	.40	.52	.40	.51	.49	.47	.52	.69	.61	.51	.08	.01	.01
8	.41	.40	.54	.49	.40	.58	.52	.50	.46	.43	.62	.59	.49	.07	.01	-.01
9	.51	.54	.35	.52	.35	.44	.39	.45	.45	.50	.46	.45	.45	.06	.05	-.05
10	.49	.55	.39	.44	.29	.49	.55	.58	.48	.35	.47	.49	.46	.08	.04	-.04
11	.37	.29	.61	.53	.54	.52	.62	.58	.50	.56	.47	.48	.51	.09	.01	.01
12	.53	.57	.52	.49	.55	.47	.53	.41	.46	.46	.46	.45	.49	.05	.01	-.01
13	.43	.51	.33	.40	.48	.51	.48	.52	.53	.54	.37	.48	.46	.07	.04	-.04
14	.53	.54	.48	.52	.54	.45	.54	.52	.46	.49	.56	.57	.52	.04	.02	.02
15	.39	.59	.58	.47	.42	.61	.58	.44	.59	.46	.57	.98	.56	.15	.06	.06
16	.55	.60	.54	.56	.42	.47	.57	.47	.61	.52	.60	.60	.54	.06	.04	.04
17	.47	.48	.45	.43	.65	.42	.48	.40	.35	.43	.49	.50	.46	.07	.04	-.04
18	.47	.51	.43	.50	.49	.56	.31	.35	.45	.42	.48	.46	.45	.07	.05	-.05
19	.59	.44	.52	.46	.56	.54	.57	.56	.51	.52	.51	.48	.52	.04	.02	.02
20	.54	.44	.69	.64	.42	.61	.55	.59	.45	.66	.57	.42	.55	.09	.05	.05
21	.64	.59	.54	.41	.62	.51	.48	.52	.64	.72	.46	.46	.55	.09	.05	.05
22	.55	.34	.61	.68	.55	.65	.44	.54	.49	.50	.50	.56	.53	.09	.03	.03
23	.57	.49	.35	.48	.44	.49	.46	.43	.55	.57	.46	.51	.48	.06	.02	-.02
24	.47	.46	.52	.64	.42	.51	.50	.46	.49	.45	.57	.55	.50	.06	.00	.00
25	.48	.51	.52	.55	.52	.48	.47	.44	.44	.44	.51	.47	.49	.04	.01	-.01
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.50(.03)		.03(.02)	.00(.03)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

A2-50-20: true $P = .50$, $N = 200$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) $(\mathrm{nBelow}_{\mathrm{high}}/\mathrm{nAbove}_{\mathrm{low}})$

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.48	.46	.58	.55	.49	.51	.51	.59	.51	.51	.52	.49	.52	.04	.02	.02
2	.53	.49	.57	.62	.59	.47	.49	.51	.46	.52	.54	.51	.53	.05	.03	.03
3	.31	.46	.53	.55	.46	.48	.50	.52	.48	.44	.58	.64	.50	.08	.00	-.00
4	.49	.49	.56	.46	.52	.44	.48	.58	.53	.47	.51	.48	.50	.04	.00	.00
5	.54	.52	.57	.53	.45	.54	.47	.48	.55	.56	.41	.47	.51	.05	.01	.01
6	.35	.32	.54	.58	.43	.49	.53	.48	.61	.38	.45	.45	.47	.09	.03	-.03
7	.44	.45	.52	.41	.50	.55	.54	.51	.46	.43	.55	.60	.50	.06	.00	-.00
8	.65	.45	.68	.55	.56	.52	.57	.56	.49	.50	.73	.58	.57	.08	.07	.07
9	.59	.48	.42	.47	.44	.45	.59	.42	.57	.48	.43	.65	.50	.08	.00	-.00
10	.48	.53	.50	.55	.50	.55	.55	.44	.46	.43	.52	.53	.50	.04	.00	.00
11	.44	.51	.45	.59	.43	.45	.36	.31	.51	.60	.27	.34	.44	.10	.06	-.06
12	.41	.37	.53	.55	.53	.38	.56	.58	.47	.48	.59	.63	.51	.08	.01	.01
13	.43	.63	.34	.43	.53	.53	.52	.49	.40	.51	.54	.46	.49	.07	.01	-.01
14	.68	.63	.50	.54	.53	.63	.50	.48	.52	.53	.52	.47	.54	.06	.04	.04
15	.65	.64	.45	.44	.44	.40	.44	.43	.54	.43	.41	.49	.48	.08	.02	-.02
16	.44	.43	.46	.68	.40	.57	.52	.51	.57	.62	.39	.58	.51	.09	.01	.01
17	.36	.45	.23	.36	.46	.28	.51	.51	.54	.34	.55	.36	.41	.10	.09	-.09
18	.52	.54	.60	.55	.49	.45	.51	.42	.50	.41	.50	.50	.50	.05	.00	.00
19	.55	.59	.54	.53	.65	.58	.44	.41	.56	.57	.34	.41	.51	.09	.01	.01
20	.52	.56	.57	.54	.50	.48	.45	.51	.50	.40	.52	.55	.51	.05	.01	.01
21	.55	.60	.43	.47	.47	.55	.36	.51	.47	.52	.48	.58	.50	.06	.00	-.00
22	.49	.41	.49	.60	.57	.51	.51	.54	.48	.44	.62	.50	.51	.06	.01	.01
23	.51	.50	.58	.41	.51	.60	.55	.61	.28	.38	.64	.54	.51	.10	.01	.01
24	.56	.47	.49	.43	.59	.50	.41	.42	.56	.56	.37	.51	.49	.07	.01	-.01
25	.48	.53	.53	.47	.46	.43	.50	.49	.47	.53	.50	.50	.49	.03	.01	-.01
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.50(.03)		.02(.02)	.00(.03)

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

A3-50-20: true $P = .50$, $N = 300$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) $(\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}})$

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.47	.46	.55	.52	.62	.51	.63	.63	.40	.39	.51	.46	.51	.08	.01	.01
2	.37	.47	.47	.43	.40	.43	.50	.57	.45	.61	.62	.49	.48	.08	.02	-.02
3	.55	.60	.45	.42	.58	.45	.61	.53	.55	.55	.46	.50	.52	.06	.02	.02
4	.60	.49	.62	.60	.63	.40	.54	.48	.42	.56	.57	.59	.54	.07	.04	.04
5	.53	.63	.42	.42	.58	.43	.50	.49	.52	.48	.56	.56	.51	.06	.01	.01
6	.48	.44	.44	.43	.48	.55	.56	.45	.46	.39	.49	.56	.48	.05	.02	-.02
7	.54	.44	.44	.54	.47	.62	.40	.49	.42	.44	.40	.37	.47	.07	.03	-.03
8	.48	.55	.53	.53	.45	.49	.44	.46	.37	.39	.58	.58	.49	.07	.01	-.01
9	.41	.60	.83	.60	.42	.56	.57	.63	.57	.42	.51	.59	.56	.11	.06	.06
10	.60	.44	.51	.51	.45	.55	.53	.49	.51	.37	.52	.51	.50	.06	.00	-.00
11	.53	.43	.49	.52	.42	.41	.38	.59	.51	.51	.52	.50	.49	.06	.01	-.01
12	.53	.39	.45	.50	.43	.51	.55	.45	.52	.57	.54	.51	.50	.05	.00	-.00
13	.50	.46	.50	.53	.63	.45	.36	.52	.57	.52	.55	.51	.51	.07	.01	.01
14	.61	.52	.50	.41	.82	.41	.52	.47	.55	.66	.47	.48	.54	.11	.04	.04
15	.61	.46	.50	.55	.63	.54	.46	.48	.58	.57	.48	.42	.52	.06	.02	.02
16	.57	.49	.44	.47	.58	.50	.35	.48	.44	.47	.55	.57	.49	.07	.01	-.01
17	.46	.53	.56	.40	.63	.64	.55	.60	.52	.68	.40	.47	.54	.09	.04	.04
18	.55	.51	.49	.54	.45	.49	.57	.33	.59	.61	.51	.43	.51	.07	.01	.01
19	.45	.42	.49	.53	.56	.43	.43	.45	.39	.39	.51	.53	.47	.05	.03	-.03
20	.46	.43	.43	.56	.64	.46	.57	.53	.47	.39	.46	.48	.49	.07	.01	-.01
21	.52	.51	.66	.63	.49	.54	.54	.32	.44	.57	.54	.48	.52	.08	.02	.02
22	.60	.65	.61	.48	.54	.43	.44	.44	.52	.58	.54	.54	.53	.07	.03	.03
23	.58	.75	.53	.53	.63	.55	.42	.56	.71	.64	.53	.42	.57	.10	.07	.07
24	.55	.45	.30	.49	.54	.41	.44	.42	.59	.56	.41	.44	.47	.08	.03	-.03
25	.48	.54	.39	.52	.43	.42	.50	.54	.40	.39	.39	.45	.45	.06	.05	-.05
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.51(.03)		.02(.02)	.01(.03)

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

A6-50-20: true $P = .50$, $N = 600$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) $(\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}})$

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.45	.51	.49	.54	.55	.56	.51	.47	.53	.46	.34	.52	.49	.06	.01	-.01
2	.55	.47	.42	.58	.64	.51	.53	.49	.51	.50	.57	.58	.53	.06	.03	.03
3	.46	.44	.59	.50	.43	.52	.54	.55	.51	.55	.52	.59	.52	.05	.02	.02
4	.56	.49	.40	.42	.70	.47	.51	.50	.52	.49	.57	.47	.51	.07	.01	.01
5	.46	.45	.57	.52	.49	.41	.54	.49	.37	.45	.41	.45	.47	.05	.03	-.03
6	.73	.56	.42	.37	.48	.56	.57	.51	.47	.48	.52	.61	.52	.09	.02	.02
7	.66	.49	.50	.70	.49	.56	.56	.50	.38	.40	.41	.51	.52	.09	.02	.02
8	.57	.50	.66	.58	.47	.35	.47	.53	.54	.47	.31	.55	.50	.09	.00	.00
9	.47	.55	.51	.58	.47	.63	.42	.54	.53	.46	.48	.43	.51	.06	.01	.01
10	.54	.40	.44	.65	.57	.59	.49	.52	.53	.43	.47	.46	.51	.07	.01	.01
11	.62	.50	.53	.44	.47	.52	.51	.54	.54	.58	.49	.43	.51	.05	.01	.01
12	.57	.59	.45	.46	.50	.57	.55	.50	.54	.48	.56	.51	.53	.04	.03	.03
13	.40	.47	.51	.45	.37	.44	.51	.52	.52	.59	.50	.36	.47	.07	.03	-.03
14	.55	.52	.44	.55	.52	.51	.56	.49	.41	.59	.55	.51	.52	.05	.02	.02
15	.59	.37	.48	.59	.51	.47	.43	.47	.48	.50	.51	.35	.48	.07	.02	-.02
16	.63	.54	.52	.48	.51	.50	.55	.51	.39	.48	.53	.59	.52	.06	.02	.02
17	.48	.54	.64	.48	.51	.37	.55	.45	.53	.57	.60	.40	.51	.08	.01	.01
18	.55	.54	.45	.53	.62	.68	.47	.52	.62	.58	.54	.58	.56	.06	.06	.06
19	.50	.51	.54	.51	.49	.44	.45	.53	.55	.58	.61	.42	.51	.05	.01	.01
20	.75	.60	.52	.64	.43	.40	.45	.45	.65	.55	.49	.41	.53	.11	.03	.03
21	.56	.57	.47	.54	.46	.61	.61	.50	.47	.54	.51	.54	.53	.05	.03	.03
22	.36	.46	.53	.49	.42	.53	.44	.44	.35	.50	.60	.62	.48	.08	.02	-.02
23	.51	.31	.54	.56	.43	.47	.46	.57	.45	.50	.55	.58	.50	.07	.00	-.00
24	.41	.40	.43	.40	.50	.53	.48	.53	.57	.57	.44	.38	.47	.07	.03	-.03
25	.49	.47	.57	.44	.52	.56	.53	.49	.46	.43	.59	.40	.49	.06	.01	-.01
Mean (SD) over 300 curves (12 in/out curves x 25 samples):													.51(.02)		.02(.01)	.01(.02)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

A3-25-20: true $P = .25$, $N = 300$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) $(\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}})$

sample	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.27	.32	.22	.30	.37	.29	.27	.27	.19	.38	.32	.09	.27	.08	.02	.02
2	.33	.22	.32	.19	.25	.22	.23	.28	.22	.27	.16	.21	.24	.05	.01	-.01
3	.44	.43	.24	.18	.38	.36	.30	.26	.26	.15	.14	.12	.27	.11	.02	.02
4	.27	.26	.14	.30	.19	.23	.26	.12	.19	.25	.14	.23	.21	.06	.04	-.04
5	-.27	.18	.27	.13	.18	.21	.21	.08	.40	.21	.14	.26	.17	.15	.08	-.08
6	.21	.20	.31	-.01	.19	.29	.06	.33	.23	.34	.29	.27	.23	.10	.02	-.02
7	.08	.13	.01	.25	.28	.24	.33	.28	.23	.20	.14	.28	.20	.09	.05	-.05
8	.38	.33	.43	.32	.22	.24	.35	.14	.09	-.05	.29	.32	.26	.13	.01	.01
9	.37	.27	.33	.26	.29	.07	.32	.32	.21	.23	.16	.30	.26	.08	.01	.01
10	.26	.26	.16	.27	.28	.34	.21	.22	.30	.27	.35	.24	.26	.05	.01	.01
11	.37	.30	.30	.26	.39	.32	.27	.29	.34	.28	.18	.19	.29	.06	.04	.04
12	.11	.31	.21	.27	.25	.42	.28	.25	.25	.19	.21	.21	.25	.07	.00	-.00
13	.29	.12	.33	.42	.16	.18	.15	.23	.25	.24	.35	.29	.25	.09	.00	.00
14	.27	.20	.21	.31	.11	.22	.17	.17	.25	.32	.23	.18	.22	.06	.03	-.03
15	.27	.13	.10	.27	.25	.24	.33	.24	.27	.22	.03	.30	.22	.09	.03	-.03
16	.28	.24	.23	.30	.40	.24	.26	.20	.20	.28	.29	.21	.26	.05	.01	.01
17	.18	.26	.19	.08	.19	.25	.05	.21	.29	.29	.27	.17	.20	.07	.05	-.05
18	.22	.23	.33	.31	.38	.26	.29	.42	.33	.16	.27	.28	.29	.07	.04	.04
19	.22	.10	.10	.06	.18	.29	.32	.21	.15	.25	.15	.17	.18	.07	.07	-.07
20	.43	.21	.37	.21	.18	.11	.29	.35	.33	.34	.27	.34	.29	.09	.04	.04
21	.19	.15	.40	.22	.28	-.02	.18	.34	.32	.34	.47	.26	.26	.12	.01	.01
22	.19	.23	.24	.41	.09	.31	.27	.27	.25	.18	.37	.40	.27	.09	.02	.02
23	.39	.31	.38	.38	.34	.29	.41	.37	.23	.16	.31	.28	.32	.07	.07	.07
24	.30	.41	.25	.34	.35	.36	.18	.28	.30	.23	.40	.38	.31	.07	.06	.06
25	.18	.44	.40	.24	.26	.30	.36	.36	.32	.15	.05	.28	.28	.11	.03	.03
Mean (SD) over 300 curves (12 in/out curves×25 samples):													.25(.04)		.03(.02)	.00(.04)

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

A6-25-20: true $P = .25$, $N = 600$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) ($\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}}$)

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.22	.38	.26	.27	.27	.27	.21	-.01	.30	.26	.21	.42	.26	.10	.01	.01
2	.05	.24	.32	.28	.26	.25	.29	.12	.20	.32	.23	.39	.25	.09	.00	-.00
3	.31	.30	.28	.20	.31	.25	.32	.26	.26	.15	.38	.31	.28	.06	.03	.03
4	.32	.21	.23	.24	.20	.30	.28	.34	.17	.06	.30	.33	.25	.08	.00	-.00
5	-.06	.30	.09	.28	.21	.26	.35	.31	.16	.25	.25	.23	.22	.11	.03	-.03
6	.24	.36	.21	.11	.38	.35	.19	.32	.33	.37	.24	.21	.28	.08	.03	.03
7	.28	.17	.16	.14	.31	.27	.21	.16	.24	.24	.34	.32	.24	.07	.01	-.01
8	.26	.28	.32	.39	.29	.25	.18	.22	.31	.24	.40	.31	.29	.06	.04	.04
9	.22	.28	.29	.24	.24	.31	.19	.29	.20	-.02	.40	.36	.25	.10	.00	-.00
10	.15	.43	.28	.28	.16	.31	.45	.23	.17	.16	.33	.34	.27	.10	.02	.02
11	.25	.25	.18	.24	.23	.34	.23	.35	.22	.31	.29	.29	.27	.05	.02	.02
12	.20	.42	.27	.33	.21	.38	.40	.28	.33	.18	.36	.24	.30	.08	.05	.05
13	.30	.25	.16	.35	.30	.30	.19	.31	.09	.16	.32	.31	.25	.08	.00	.00
14	.35	.03	.23	.30	.29	.18	.19	.22	.19	.24	.39	.40	.25	.10	.00	.00
15	.26	.30	.33	.18	.23	.22	.24	.23	.17	.28	.36	.18	.25	.06	.00	-.00
16	.26	.26	.32	.27	.20	.14	.36	.29	.23	.24	.32	.26	.26	.05	.01	.01
17	.25	.25	.30	.12	.16	.29	.31	.20	.28	.27	.15	.15	.23	.06	.02	-.02
18	.24	.14	.27	.24	.27	.35	.16	.31	.25	.16	.25	.21	.24	.06	.01	-.01
19	.17	.10	.37	.12	.34	.38	.33	.22	.24	.25	.36	.23	.26	.09	.01	.01
20	.28	.38	.30	.45	.24	.32	.23	.30	.29	.14	.34	.40	.31	.08	.06	.06
21	.19	.21	.25	.20	.20	.28	.12	.07	.27	.22	.40	.20	.22	.08	.03	-.03
22	.19	.29	.37	-.27	.36	.18	.25	.30	.23	.27	.38	.28	.24	.16	.01	-.01
23	.06	.23	.34	.24	.32	.23	.34	.30	.28	.34	.33	.20	.27	.08	.02	.02
24	.34	.27	.18	.25	.20	.27	.32	.18	.26	.17	.28	.39	.26	.07	.01	.01
25	.16	.28	.24	.22	.33	.27	.30	.18	.15	.34	.24	.40	.26	.07	.01	.01
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.26(.02)		.02(.01)	.01(.02)

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

A3-10-20: true $P = .10$, $N = 300$, 2 *SD* separation on all variables

$\hat{P} = 1/(R + 1)$

where R = (MAMBAC at high end of input curve/low end of input curve) ($\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}}$)

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.10	.15	.38	.36	-.06	.12	.34	.05	.15	.21	.14	.21	.18	.13	.08	.08
2	-.45	.17	.16	.04	.27	.08	-.05	.17	.07	.23	-.02	-.05	.05	.18	.05	-.05
3	.19	.16	-.07	-.28	.20	.04	.01	.07	.17	-.14	.33	.17	.07	.16	.03	-.03
4	.15	.30	.05	.22	.07	.09	.29	.21	.16	.08	.08	.29	.17	.09	.07	.07
5	.02	.01	-.03	.20	.24	.19	.12	.23	.24	.17	.03	.11	.13	.10	.03	.03
6	.34	.22	-.03	-.15	.18	.30	.19	.16	.18	.15	.19	.05	.15	.13	.05	.05
7	.05	.02	.26	.23	.04	-.20	.08	-.14	.12	.39	.16	-.11	.07	.16	.03	-.03
8	.06	.05	-.12	.19	.23	.22	.06	-.06	.12	.09	.16	-.09	.08	.11	.02	-.02
9	.17	.40	-.01	.17	.08	.32	-.28	-.11	.21	.25	.09	.16	.12	.18	.02	.02
10	.09	.13	.22	.26	-.02	.40	.09	.22	.30	.29	.36	.54	.24	.15	.14	.14
11	.19	.21	.25	-.07	.30	.18	.16	.09	.11	.20	.15	-.01	.15	.10	.05	.05
12	-.06	-.10	-.01	-.03	.12	.07	.29	.28	.15	.17	.19	.20	.11	.13	.01	.01
13	.01	-.01	.04	.20	-.09	.16	.10	.09	.14	.26	-.05	-.05	.07	.11	.03	-.03
14	.09	.04	.17	-.16	-.07	-.13	.16	.07	.01	.12	.23	.08	.05	.12	.05	-.05
15	.20	.14	-.01	.04	-.08	.26	.28	.04	-.23	.12	.04	.10	.07	.14	.03	-.03
16	.18	.17	.18	.05	.21	.66	.18	.26	.06	.05	.31	.37	.22	.16	.12	.12
17	.25	.14	.13	.01	.08	.12	.14	.02	-.02	.15	-.21	.27	.09	.12	.01	-.01
18	.07	-.06	.19	.21	.03	-.13	.12	.21	-.03	.11	.14	-.08	.07	.11	.03	-.03
19	.14	.18	.10	.12	-.02	.25	.33	.38	.18	.22	.26	.38	.21	.11	.11	.11
20	.26	.27	.12	.15	.04	.13	.10	.04	.32	.41	.02	-.06	.15	.13	.05	.05
21	.31	.19	.16	.21	-.15	.16	-.05	.30	-.10	-.06	.11	.15	.10	.15	.00	.00
22	.15	.16	.05	.03	.12	.13	-.20	.19	.18	.19	.13	.26	.12	.11	.02	.02
23	.05	-.12	.16	-.06	.16	-1.12	.21	.03	-.01	.31	.44	.14	.02	.37	.08	-.08
24	-.04	.08	.25	-.63	.25	.20	.09	.04	.20	-.03	-.70	-.11	-.03	.30	.13	-.13
25	.05	.18	-.13	.28	.27	.07	-.14	-.29	.04	-.13	.20	.03	.04	.17	.06	-.06
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.11(.06)		.05(.04)	.01(.06)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

A6-10-20: true $P = .10$, $N = 600$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) $(\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}})$

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.23	.19	.04	.08	.09	-.03	-.12	.02	.01	.18	-.04	-.05	.05	.10	.05	-.05
2	.07	.12	.30	.27	.22	.32	-.05	.03	.09	-.07	.01	.21	.13	.13	.03	.03
3	.13	.10	-.01	.12	.34	-.03	.01	.05	.13	.22	.23	.11	.12	.10	.02	.02
4	-.34	.19	.13	-.05	.32	.31	.24	.17	.17	.13	.19	.17	.14	.17	.04	.04
5	.25	.26	.06	-.02	.22	.29	.09	.05	.26	.17	.05	.15	.15	.10	.05	.05
6	.30	.23	.12	.04	.13	-.25	.08	.02	.21	.19	.02	.20	.11	.14	.01	.01
7	.28	-.19	.13	.19	.13	.33	.07	.18	.08	-.03	.14	.08	.11	.13	.01	.01
8	.15	.11	-.01	.16	.18	.13	.17	.10	.18	.06	.17	.13	.13	.05	.03	.03
9	.17	.19	.14	.08	.03	.24	.12	.04	.15	.02	-.02	.08	.10	.07	.00	.00
10	-.05	.27	.04	.09	.11	.06	.04	.05	.44	.28	.19	.14	.14	.13	.04	.04
11	.26	.19	.25	.26	.04	.02	-.02	.13	.08	.01	.11	.15	.12	.10	.02	.02
12	-.30	.34	.09	.23	.38	.12	-.10	.19	.02	.03	.27	.35	.14	.19	.04	.04
13	.07	.23	.13	.25	.06	.03	.10	.07	.16	.20	-.02	.09	.11	.08	.01	.01
14	.01	.14	.01	.16	.14	.19	-.16	.04	.11	.05	.14	.18	.09	.10	.01	-.01
15	-.05	.18	.22	.20	.25	-.15	.10	.16	.22	.09	-.21	-.02	.08	.15	.02	-.02
16	.09	.17	.14	.08	.16	.22	-.23	.12	.04	.22	.08	.08	.10	.11	.00	-.00
17	.04	.17	.30	.29	.33	.04	-.04	.07	.19	.35	.13	-.01	.16	.13	.06	.06
18	.20	.03	.14	-.03	.09	.10	.14	.27	.10	.09	.19	.02	.11	.08	.01	.01
19	.09	.26	.17	.24	.12	-.16	.25	.20	-.02	.02	.16	.13	.12	.12	.02	.02
20	.11	.22	.20	.25	.05	-.03	-.11	.08	-.26	-.01	.12	.18	.07	.14	.03	-.03
21	.28	.14	.16	.02	.15	.14	.21	.21	.10	.03	.15	.08	.14	.07	.04	.04
22	.02	-.01	-.05	.26	.24	.10	.18	.07	.20	.05	.16	.04	.11	.10	.01	.01
23	.07	.12	.16	.14	.21	-.07	.29	.28	.02	.12	.22	.27	.15	.11	.05	.05
24	.04	.06	.26	.34	.14	.25	.11	.15	.20	.24	.13	.24	.18	.09	.08	.08
25	.17	.09	.32	.06	-.01	.02	.10	.11	.08	.14	.16	-.12	.09	.10	.01	-.01
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.12(.03)		.03(.02)	.02(.03)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

A3-50-15: true $P = .50$, $N = 300$, 1.5 *SD* separation on all variables

$\hat{P} = 1/(R + 1)$

where R = (MAMBAC at high end of input curve/low end of input curve) $(\mathrm{nBelow}_{\mathrm{high}}/\mathrm{nAbove}_{\mathrm{low}})$

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.32	.34	.51	.48	.44	.38	.55	.71	.48	.39	.67	.61	.49	.12	.01	-.01
2	.58	.72	.61	.43	.36	.55	.61	.38	.55	.47	.50	.46	.52	.10	.02	.02
3	.54	.65	.62	.54	.53	.41	.38	.37	.44	.58	.45	.42	.49	.09	.01	-.01
4	.36	.43	.57	.59	.45	.59	.54	.60	.48	.57	.43	.48	.51	.08	.01	.01
5	.45	.36	.50	.42	.57	.70	.49	.31	.50	.56	.45	.70	.50	.11	.00	.00
6	.53	.47	.53	.56	.48	.52	.40	.51	.23	.43	.46	.24	.45	.11	.05	-.05
7	.51	.49	.40	.48	.46	.49	.59	.55	.48	.41	.49	.40	.48	.05	.02	-.02
8	.64	.41	.46	.59	.52	.39	.65	.53	.37	.44	.40	.68	.51	.11	.01	.01
9	.51	.42	.53	.56	.53	.62	.58	.51	.52	.47	.30	.37	.49	.09	.01	-.01
10	.47	.43	.47	.38	.49	.39	.38	.60	.45	.25	.51	.51	.44	.08	.06	-.06
11	.59	.33	.61	.44	.53	.56	.42	.42	.72	.59	.63	.49	.53	.10	.03	.03
12	.55	.43	.31	.32	.32	.37	.61	.76	.68	.55	.56	.47	.49	.14	.01	-.01
13	.49	.66	.57	.64	.56	.41	.77	.70	.48	.37	.51	.56	.56	.11	.06	.06
14	.65	.52	.55	.53	.49	.47	.44	.60	.43	.62	.39	.54	.52	.07	.02	.02
15	.47	.42	.37	-.04	.53	.40	.48	.39	.66	.60	.86	.52	.47	.20	.03	-.03
16	.62	.56	.64	.30	.46	.37	.55	.28	.62	.72	.62	.44	.51	.14	.01	.01
17	.47	.55	.45	.35	.66	.50	.43	.61	.59	.60	.61	.49	.53	.09	.03	.03
18	.40	.41	.52	.28	.53	.66	.56	.49	.56	.64	.54	.63	.52	.11	.02	.02
19	.65	.62	.54	.61	.40	.42	.78	.56	.45	.48	.58	.41	.54	.11	.04	.04
20	.48	.62	.65	.58	.51	.46	.29	.33	.41	.35	.39	.43	.46	.11	.04	-.04
21	.40	.49	.56	.46	.43	.39	.33	.47	.63	.48	.49	.58	.48	.08	.02	-.02
22	.58	.74	.45	.30	.37	.54	.75	.57	.48	.41	.57	.55	.53	.13	.03	.03
23	.54	.57	.73	.52	.51	.44	.47	.73	.50	.69	.53	.57	.57	.09	.07	.07
24	.61	.56	.53	.59	.65	.50	.52	.71	.59	.35	.66	.49	.56	.09	.06	.06
25	.49	.36	.53	.61	.43	.29	.42	.50	.54	.34	.42	.53	.45	.09	.05	-.05
	Mean (SD) over 300 curves (12 in/out curves × 25 samples):												.50(.03)		.03(.02)	.00(.03)

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

A6-50-15: true $P = .50$, $N = 600$, 1.5 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) ($\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}}$)

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
-----	---	---	---	---	---	---	---	---	---	---	---	---	----	---	-----	-----
1	.37	.34	.57	.52	.64	.62	.53	.56	.34	.51	.77	.42	.52	.13	.02	.02
2	.57	.49	.46	.51	.66	.72	.49	.70	.60	.45	.48	.59	.56	.09	.06	.06
3	.56	.48	.43	.39	.45	.41	.41	.36	.55	.53	.26	.63	.45	.10	.05	-.05
4	.76	.43	.63	.60	.63	.30	.44	.28	.60	.26	.52	.56	.50	.15	.00	.00
5	.37	.35	.40	.38	.56	.57	.59	.41	.37	.58	.64	.66	.49	.11	.01	-.01
6	.50	.74	.39	.49	.50	.46	.73	.53	.60	.60	.38	.42	.53	.11	.03	.03
7	.48	.64	.46	.67	.57	.54	.66	.57	.57	.62	.46	.45	.56	.08	.06	.06
8	.44	.46	.46	.65	.49	.51	.59	.56	.53	.43	.34	.53	.50	.08	.00	-.00
9	.52	.57	.55	.50	.56	.69	.57	.54	.56	.37	.66	.58	.56	.08	.06	.06
10	.27	.49	.49	.47	.66	.50	.49	.89	.60	.48	.54	.65	.54	.14	.04	.04
11	.56	.51	.60	.48	.67	.42	.54	.66	.57	.47	.60	.59	.56	.07	.06	.06
12	.63	.49	.64	.39	.47	.47	.49	.51	.59	.53	.37	.47	.50	.08	.00	.00
13	.39	.42	.52	.48	.49	.66	.23	.57	.46	.60	.45	.61	.49	.11	.01	-.01
14	.53	.69	.49	.58	.35	.29	.34	.37	.51	.53	.60	.72	.50	.13	.00	-.00
15	.44	.64	.51	.45	.66	.65	.64	.50	.55	.48	.54	.51	.55	.08	.05	.05
16	.46	.25	.43	.48	.40	.43	.60	.60	.49	.38	.66	.61	.48	.11	.02	-.02
17	.53	.68	.59	.53	.44	.52	.45	.38	.88	.65	.48	.59	.56	.13	.06	.06
18	.48	.49	.40	.50	.49	.54	.56	.66	.48	.47	.59	.68	.53	.08	.03	.03
19	.49	.51	.74	.64	.24	.44	.46	.57	.40	.52	.42	.53	.49	.12	.01	-.01
20	.53	.49	.49	.59	.37	.48	.62	.50	.48	.53	.57	.63	.52	.07	.02	.02
21	.54	.46	.46	.52	.59	.64	.41	.51	.65	.53	.58	.64	.54	.07	.04	.04
22	.58	.73	.39	.53	.72	.42	.54	.50	.87	.60	.42	.15	.54	.18	.04	.04
23	.55	.58	.44	.56	.44	.31	.45	.46	.62	.53	.52	.59	.50	.08	.00	.00
24	.43	.62	.60	.50	.44	.45	.63	.33	.59	.48	.60	.53	.52	.09	.02	.02
25	.51	.58	.46	.33	.55	.66	.61	.50	.58	.45	.45	.53	.52	.09	.02	.02
	Mean (SD) over 300 curves (12 in/out curves × 25 samples):												.52(.03)		.03(.02)	.02(.03)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

N3-50-20: true $P = .50$, $N = 300$, 2 *SD* separation on all variables

$\hat{P} = 1/(R + 1)$

where R = (MAMBAC at high end of input curve/low end of input curve) ($nBelow_{high}/nAbove_{low}$)

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.50	.49	.42	.46	.56	.54	.51	.52	.46	.59	.56	.58	.52	.05	.02	.02
2	.54	.48	.55	.50	.49	.47	.42	.53	.48	.48	.58	.54	.51	.04	.01	.01
3	.49	.42	.48	.57	.38	.43	.52	.53	.44	.52	.34	.48	.47	.06	.03	-.03
4	.49	.47	.47	.48	.41	.44	.44	.47	.45	.53	.47	.45	.46	.03	.04	-.04
5	.44	.42	.45	.44	.51	.49	.41	.52	.46	.43	.54	.43	.46	.04	.04	-.04
6	.57	.57	.50	.46	.49	.67	.57	.51	.54	.52	.48	.51	.53	.05	.03	.03
7	.50	.51	.59	.62	.49	.57	.48	.52	.69	.57	.51	.48	.54	.06	.04	.04
8	.46	.46	.56	.52	.34	.42	.46	.51	.50	.55	.50	.46	.48	.06	.02	-.02
9	.48	.42	.51	.45	.56	.69	.54	.47	.43	.44	.50	.55	.50	.07	.00	.00
10	.56	.48	.53	.52	.53	.47	.56	.55	.50	.42	.45	.50	.51	.04	.01	.01
11	.42	.50	.52	.52	.52	.51	.47	.48	.37	.45	.57	.56	.49	.05	.01	-.01
12	.47	.43	.54	.58	.54	.49	.61	.58	.47	.43	.60	.60	.53	.06	.03	.03
13	.48	.55	.42	.52	.48	.39	.48	.53	.56	.39	.54	.49	.49	.06	.01	-.01
14	.43	.43	.48	.44	.65	.65	.41	.54	.47	.63	.58	.64	.53	.09	.03	.03
15	.48	.50	.53	.62	.44	.47	.58	.54	.36	.44	.54	.53	.50	.07	.00	.00
16	.51	.45	.47	.50	.52	.56	.52	.48	.56	.57	.43	.49	.51	.04	.01	.01
17	.47	.50	.47	.48	.59	.55	.50	.55	.57	.53	.48	.57	.52	.04	.02	.02
18	.44	.52	.51	.59	.53	.60	.50	.46	.51	.47	.58	.55	.52	.05	.02	.02
19	.43	.40	.45	.57	.47	.49	.52	.52	.39	.39	.44	.37	.45	.06	.05	-.05
20	.63	.56	.61	.63	.58	.56	.55	.50	.44	.52	.41	.45	.54	.07	.04	.04
21	.55	.50	.53	.49	.55	.51	.52	.51	.48	.49	.47	.45	.50	.03	.00	.00
22	.48	.48	.60	.51	.54	.62	.41	.43	.40	.61	.46	.54	.51	.07	.01	.01
23	.44	.46	.50	.47	.44	.50	.61	.51	.39	.43	.46	.50	.48	.05	.02	-.02
24	.54	.50	.47	.53	.47	.50	.52	.49	.47	.47	.54	.44	.49	.03	.01	-.01
25	.43	.49	.43	.46	.51	.44	.57	.53	.43	.42	.59	.52	.48	.06	.02	-.02
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.50(.02)		.02(.01)	.00(.02)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

N6-50-20: true $P = .50$, $N = 600$, 2 *SD* separation on all variables
$\hat{P} = 1/(R + 1)$
where R = (MAMBAC at high end of input curve/low end of input curve) ($\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}}$)

sample						output/input										
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.46	.51	.50	.47	.49	.56	.51	.44	.38	.45	.54	.58	.49	.05	.01	-.01
2	.56	.51	.51	.48	.55	.49	.52	.57	.52	.52	.42	.40	.51	.05	.01	.01
3	.51	.56	.48	.54	.48	.46	.57	.56	.42	.46	.50	.57	.51	.05	.01	.01
4	.49	.47	.55	.54	.42	.51	.48	.47	.63	.48	.43	.48	.50	.05	.00	-.00
5	.48	.52	.50	.44	.38	.53	.51	.49	.36	.50	.43	.53	.47	.05	.03	-.03
6	.48	.51	.44	.50	.56	.60	.54	.52	.53	.55	.38	.55	.51	.06	.01	.01
7	.54	.48	.53	.50	.60	.60	.38	.47	.50	.45	.48	.54	.51	.06	.01	.01
8	.47	.53	.44	.53	.59	.45	.54	.56	.51	.47	.62	.53	.52	.05	.02	.02
9	.54	.57	.59	.57	.52	.55	.55	.55	.46	.47	.44	.53	.53	.05	.03	.03
10	.55	.51	.50	.44	.46	.47	.59	.45	.52	.46	.44	.47	.49	.04	.01	-.01
11	.55	.56	.49	.49	.38	.45	.49	.51	.53	.56	.38	.38	.48	.06	.02	-.02
12	.50	.51	.53	.56	.33	.41	.43	.59	.52	.50	.54	.59	.50	.07	.00	.00
13	.47	.51	.39	.44	.53	.62	.51	.41	.53	.53	.53	.48	.50	.06	.00	-.00
14	.56	.47	.49	.45	.55	.42	.53	.55	.44	.48	.51	.52	.50	.05	.00	-.00
15	.52	.55	.58	.55	.55	.51	.46	.55	.51	.45	.59	.53	.53	.04	.03	.03
16	.43	.47	.51	.50	.60	.55	.49	.43	.46	.44	.57	.47	.49	.05	.01	-.01
17	.46	.50	.49	.50	.53	.56	.49	.54	.50	.50	.58	.58	.52	.04	.02	.02
18	.48	.52	.52	.57	.56	.55	.55	.58	.46	.48	.56	.55	.53	.04	.03	.03
19	.45	.46	.43	.45	.44	.52	.53	.52	.51	.38	.44	.54	.47	.05	.03	-.03
20	.51	.47	.50	.42	.50	.55	.47	.50	.40	.49	.57	.66	.50	.07	.00	.00
21	.46	.46	.43	.47	.47	.56	.52	.42	.41	.42	.46	.55	.47	.05	.03	-.03
22	.53	.53	.47	.53	.53	.45	.53	.50	.54	.47	.59	.45	.51	.04	.01	.01
23	.53	.53	.54	.46	.44	.45	.51	.49	.55	.50	.54	.56	.51	.04	.01	.01
24	.53	.52	.53	.45	.47	.42	.56	.51	.61	.45	.46	.49	.50	.05	.00	-.00
25	.50	.50	.48	.48	.49	.48	.56	.50	.51	.45	.56	.47	.50	.03	.00	-.00
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.50(.02)		.01(.01)	.00(.02)

MAMBAC: Estimation of Base Rate *P*
Using FIRST and LAST abscissa intervals

D3-50-v1: true $P = .50$, $N = 300$, separation on $x = 2.00$ *SD* $y = 1.75$ *SD*
$\hat{P} = 1/(R + 1)$ $z = 1.50$ *SD* $v = 1.25$ *SD*
where R = (MAMBAC at high end of input curve/low end of input curve) ($\text{nBelow}_{\text{high}}/\text{nAbove}_{\text{low}}$)

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	*SD*	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.53	.51	.53	.44	.56	.48	.50	.48	.52	.52	.50	.54	.51	.03	.01	.01
2	.44	.54	.57	.60	.53	.37	.56	.51	.44	.38	.55	.28	.48	.09	.02	-.02
3	.53	.45	.55	.44	.50	.54	.46	.40	.44	.43	.31	.56	.47	.07	.03	-.03
4	.48	.52	.55	.52	.67	.58	.65	.56	.50	.47	.43	.61	.55	.07	.05	.05
5	.53	.50	.54	.46	.66	.64	.48	.46	.47	.44	.68	.71	.55	.09	.05	.05
6	.46	.49	.53	.57	.49	.45	.54	.60	.60	.58	.65	.47	.54	.06	.04	.04
7	.46	.47	.61	.51	.50	.43	.57	.56	.57	.46	.33	.46	.49	.07	.01	-.01
8	.47	.46	.47	.48	.53	.57	.48	.44	.46	.61	.55	.70	.52	.07	.02	.02
9	.51	.48	.40	.39	.52	.42	.55	.42	.27	.35	.67	.51	.46	.10	.04	-.04
10	.52	.47	.51	.43	.49	.46	.38	.39	.53	.54	.36	.39	.46	.06	.04	-.04
11	.55	.49	.39	.42	.42	.49	.52	.52	.41	.59	.39	.47	.47	.06	.03	-.03
12	.49	.49	.53	.54	.49	.53	.51	.59	.56	.49	.42	.42	.50	.05	.00	.00
13	.56	.52	.53	.56	.56	.48	.52	.51	.44	.50	.48	.50	.52	.04	.02	.02
14	.58	.51	.37	.49	.51	.48	.45	.44	.43	.28	.55	.53	.47	.08	.03	-.03
15	.47	.47	.50	.48	.59	.57	.59	.59	.41	.45	.56	.50	.51	.06	.01	.01
16	.51	.47	.58	.62	.48	.56	.44	.59	.39	.51	.53	.53	.52	.06	.02	.02
17	.54	.53	.45	.54	.46	.48	.50	.42	.48	.42	.39	.51	.48	.05	.02	-.02
18	.43	.48	.46	.52	.47	.47	.46	.37	.32	.31	.66	.51	.46	.09	.04	-.04
19	.58	.53	.53	.49	.57	.46	.54	.52	.37	.43	.47	.62	.51	.07	.01	.01
20	.40	.41	.36	.36	.41	.46	.36	.41	.50	.53	.55	.52	.44	.07	.06	-.06
21	.50	.51	.47	.50	.63	.66	.57	.57	.63	.74	.51	.53	.57	.08	.07	.07
22	.53	.57	.60	.45	.51	.51	.61	.60	.62	.57	.40	.44	.54	.07	.04	.04
23	.51	.48	.51	.42	.39	.53	.48	.45	.52	.63	.39	.33	.47	.08	.03	-.03
24	.46	.49	.51	.54	.45	.57	.55	.49	.39	.48	.61	.74	.52	.09	.02	.02
25	.53	.50	.47	.53	.35	.45	.51	.54	.54	.53	.47	.37	.48	.06	.02	-.02
Mean (SD) over 300 curves (12 in/out curves×25 samples):													.50(.03)		.03(.02)	.00(.03)

MAMBAC: Estimation of Base Rate P
Using FIRST and LAST abscissa intervals

D6-50-v1: true $P = .50$, $N = 600$, separation on $x = 2.00$ SD $y = 1.75$ SD
$\hat{P} = 1/(R + 1)$ $z = 1.50$ SD $v = 1.25$ SD
where R = (MAMBAC at high end of input curve/low end of input curve) (nBelow$_{\text{high}}$/nAbove$_{\text{low}}$)

sample	output/input															
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	Mean $\hat{P}$	SD	$\lvert\hat{P} - P\rvert$	$\hat{P} - P$
1	.55	.56	.46	.42	.44	.64	.49	.42	.55	.62	.58	.51	.52	.07	.02	.02
2	.48	.50	.44	.51	.51	.47	.44	.57	.50	.51	.39	.53	.49	.05	.01	-.01
3	.48	.52	.48	.50	.55	.56	.54	.51	.55	.54	.52	.43	.51	.04	.01	.01
4	.41	.54	.55	.53	.47	.43	.53	.45	.50	.57	.55	.54	.51	.05	.01	.01
5	.46	.46	.47	.45	.47	.47	.45	.48	.61	.48	.51	.53	.49	.04	.01	-.01
6	.53	.49	.45	.51	.58	.54	.50	.45	.58	.55	.54	.55	.52	.04	.02	.02
7	.43	.44	.46	.48	.49	.61	.50	.52	.52	.52	.42	.42	.48	.05	.02	-.02
8	.55	.54	.38	.40	.62	.52	.52	.46	.14	.41	.44	.56	.46	.12	.04	-.04
9	.46	.50	.41	.47	.41	.52	.48	.46	.56	.54	.43	.49	.48	.05	.02	-.02
10	.53	.52	.45	.48	.63	.56	.40	.55	.37	.40	.39	.51	.48	.08	.02	-.02
11	.50	.52	.56	.53	.52	.54	.47	.50	.62	.59	.48	.62	.54	.05	.04	.04
12	.44	.48	.49	.48	.57	.48	.56	.48	.45	.45	.64	.57	.51	.06	.01	.01
13	.52	.45	.52	.54	.60	.55	.50	.43	.50	.56	.66	.65	.54	.07	.04	.04
14	.50	.53	.48	.57	.55	.52	.62	.56	.31	.56	.33	.56	.51	.09	.01	.01
15	.45	.54	.61	.59	.62	.49	.38	.45	.45	.43	.48	.55	.50	.08	.00	.00
16	.43	.49	.49	.43	.60	.47	.46	.57	.49	.51	.62	.36	.49	.07	.01	-.01
17	.45	.48	.54	.59	.33	.39	.48	.58	.54	.50	.18	.41	.46	.11	.04	-.04
18	.49	.55	.50	.56	.47	.55	.56	.52	.62	.59	.65	.50	.55	.05	.05	.05
19	.43	.40	.59	.49	.45	.57	.41	.45	.43	.65	.43	.48	.48	.08	.02	-.02
20	.44	.40	.47	.52	.45	.58	.48	.45	.56	.51	.49	.58	.49	.05	.01	-.01
21	.45	.48	.58	.50	.53	.44	.47	.42	.49	.46	.32	.42	.46	.06	.04	-.04
22	.52	.56	.53	.56	.50	.56	.57	.52	.50	.57	.62	.61	.55	.04	.05	.05
23	.56	.55	.57	.53	.53	.65	.42	.42	.73	.66	.79	.68	.59	.11	.09	.09
24	.51	.52	.42	.36	.51	.60	.42	.31	.54	.56	.57	.49	.48	.09	.02	-.02
25	.49	.51	.44	.38	.41	.52	.45	.51	.61	.51	.61	.46	.49	.07	.01	-.01
Mean (SD) over 300 curves (12 in/out curves × 25 samples):													.50(.03)		.02(.02)	.00(.03)

APPENDIX F

"BASE-RATE" ESTIMATES FROM NONTAXONIC SAMPLES

Mean "base-rate" estimates (using abscissa cuts) over 300 curves per configuration for nontaxonic samples (12 curves per sample × 25 samples per configuration)

Sample Configuration[1]	r_{ij}	N	"base rate"	*SD*
E300	.26	300	.51	.06
E600	.26	600	.51	.05
B300	.36	300	.51	.04
B600	.36	600	.49	.04
F300	.44	300	.50	.04
F600	.44	600	.50	.04
C100	.50	100	.50	.03
C200	.50	200	.50	.04
C300	.50	300	.50	.05
C600	.50	600	.48	.03
N300	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$	300	.50	.04
N600	correlations same as for N300	600	.48	.03
D300	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$	300	.49	.04
D600	correlations same as for D300	600	.51	.04

[1] The letter is the authors' code for the configuration of factor loadings used to produce the desired r_{ij}; the number part indicates sample size.

APPENDIX G

TAXONIC SEPARATION ESTIMATES FROM TAXONIC SAMPLES

Estimates based on the first and last abscissa cuts are given for all input/output combinations for each taxonic configuration. See Appendix H (p. 1216) for a summary of pseudoestimates generated by the nontaxonic samples. Ordering of configurations in this appendix:

N[1]	Taxonic Configuration				Expected r_{ij}[6]
	P[2]	sep	Factor Loadings[4]	File Code[5]	
100	.50	2.0	0	A1-50-20	.50
200	.50	2.0	0	A2-50-20	.50
300	.50	2.0	0	A3-50-20	.50
600	.50	2.0	0	A6-50-20	.50
300	.25	2.0	0	A3-25-20	.43
600	.25	2.0	0	A6-25-20	.43
300	.10	2.0	0	A3-10-20	.26
600	.10	2.0	0	A6-10-20	.26
300	.50	1.5	0	A3-50-15	.36
600	.50	1.5	0	A6-50-15	.36
300	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N3-50-20	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
600	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N6-50-20	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
300	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D3-50-v1	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$
600	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D6-50-v1	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$

[1] Sample size. [2] Base rate. [3] Amount of separation in *SD* units, same for all four variables unless given otherwise. [4] Same for all variables in taxon and in complement groups unless given otherwise. [5] A filename coding used by the authors for identification of the Monte Carlo samples. [6] Same for all variables unless given otherwise.

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A1-50-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.53	1.73	1.95	2.01	1.92	2.31	2.36	2.03	1.69	1.99	2.38	2.20	2.02	1.85	2.17	2.00	2.01	.26
2	1.25	0.93	2.08	0.96	1.48	1.17	2.18	1.59	1.17	1.25	1.60	2.13	1.02	1.36	2.13	1.42	1.48	.43
3	1.46	1.87	1.82	2.15	1.45	2.00	1.85	1.56	1.91	1.50	1.79	1.61	2.01	1.51	1.76	1.72	1.75	.22
4	2.00	1.86	1.45	1.83	2.34	2.47	1.83	1.39	1.90	2.12	1.76	1.71	2.05	1.84	1.66	2.00	1.89	.30
5	1.68	1.83	1.90	1.57	1.75	1.92	2.00	1.91	1.96	1.88	1.86	1.92	1.77	1.82	1.94	1.86	1.85	.12
6	1.87	1.85	1.77	1.64	2.06	1.69	2.21	2.17	2.23	1.95	2.01	1.87	1.73	2.00	1.95	2.10	1.94	.19
7	1.29	1.29	2.04	1.98	1.10	1.30	2.07	1.72	2.07	1.56	2.15	1.93	1.52	1.52	2.01	1.77	1.71	.36
8	1.91	1.94	1.66	1.96	2.05	2.48	1.99	2.22	1.89	2.16	1.72	1.70	2.13	2.10	1.78	1.89	1.97	.23
9	1.60	1.88	1.42	1.76	1.69	2.41	1.98	1.84	2.03	2.04	1.64	1.76	2.02	1.83	1.72	1.79	1.84	.25
10	1.95	2.06	2.04	2.34	1.45	1.94	1.95	1.66	1.81	1.65	1.85	2.01	2.11	1.75	2.00	1.70	1.89	.22
11	1.48	1.82	1.82	1.75	2.22	2.00	1.87	1.55	1.76	1.58	1.84	1.61	1.86	1.54	1.77	1.94	1.78	.20
12	1.94	2.21	2.13	2.05	2.53	2.27	2.04	2.20	2.17	2.03	1.97	1.66	2.18	2.06	1.94	2.22	2.10	.20
13	2.35	2.46	2.17	2.23	1.96	2.30	1.98	2.16	1.83	2.08	1.93	2.37	2.33	2.20	2.17	1.91	2.15	.19
14	2.07	2.77	1.83	1.84	2.06	2.60	1.78	1.88	2.23	2.17	1.59	1.97	2.40	2.04	1.86	1.96	2.07	.33
15	1.49	1.45	1.58	1.54	2.08	1.56	1.23	1.25	1.94	1.79	1.24	1.27	1.52	1.51	1.36	1.75	1.54	.27
16	1.47	1.44	1.90	2.10	1.70	1.50	1.56	2.12	2.41	1.96	2.64	2.01	1.68	1.85	1.82	2.25	1.90	.37
17	1.69	1.72	1.97	1.96	2.03	2.56	2.18	2.28	1.10	1.57	1.76	1.92	2.08	1.85	2.02	1.63	1.90	.36
18	2.47	1.88	1.73	1.39	1.74	1.17	1.77	2.24	2.43	2.42	2.26	1.86	1.48	2.38	1.79	2.14	1.95	.40
19	1.63	1.47	1.21	1.38	2.02	1.73	1.72	1.88	1.68	1.58	1.85	1.78	1.53	1.70	1.57	1.85	1.66	.22
20	1.89	1.76	1.99	1.89	1.42	1.19	1.17	1.20	1.69	1.66	1.44	1.36	1.61	1.58	1.51	1.52	1.56	.28
21	1.49	1.60	1.85	2.04	1.48	1.63	1.71	1.43	0.87	0.98	2.04	2.36	1.76	1.30	1.97	1.46	1.62	.41
22	1.68	1.43	1.81	1.65	1.83	1.47	2.05	1.82	2.16	1.61	2.07	2.00	1.52	1.70	1.95	2.02	1.80	.23
23	1.69	1.91	2.12	2.16	1.42	2.05	2.03	1.57	1.77	1.48	2.01	2.13	2.04	1.58	2.09	1.73	1.86	.25
24	2.14	2.17	1.49	1.49	1.86	1.75	1.93	2.05	2.50	2.29	2.06	1.62	1.80	2.16	1.68	2.14	1.95	.30
25	2.44	2.46	1.91	2.01	2.12	2.05	1.95	2.18	2.24	2.21	1.92	1.67	2.17	2.28	1.84	2.09	2.10	.22
												mean	1.85	1.81	1.86	1.87	1.85	
												SD	.31	.28	.20	.22	.18	

True sep = taxon mean - comp mean					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	2.08	2.01	2.41	1.98	.06	.16	.24	-.02	.06	.16	.24	.02	3	8	10	1
2	1.39	1.83	2.42	1.81	.37	.47	.29	.39	.37	.47	.29	.39	27	26	12	22
3	1.97	1.62	1.86	1.74	-.04	.11	.10	.02	.04	.11	.10	.02	2	7	5	1
4	2.09	2.08	1.74	2.02	.04	.24	.08	.02	.04	.24	.08	.02	2	12	4	1
5	1.81	1.81	2.00	1.98	.04	-.01	.06	.12	.04	.01	.06	.12	2	1	3	6
6	1.76	2.18	1.89	2.45	.03	.18	-.06	.35	.03	.18	.06	.35	2	8	3	14
7	1.78	1.74	2.19	2.02	.26	.22	.18	.25	.26	.22	.18	.25	14	12	8	12
8	2.04	2.03	1.83	1.95	-.09	-.07	.05	.06	.09	.07	.05	.06	4	3	3	3
9	2.11	1.95	2.13	2.08	.09	.12	.41	.29	.09	.12	.41	.29	4	6	19	14
10	1.95	1.89	2.00	1.72	-.16	.14	.0	.02	.16	.14	.0	.02	8	7	0	1
11	2.08	1.71	1.94	2.23	.22	.17	.17	.29	.22	.17	.17	.29	11	10	9	13
12	2.19	1.94	1.86	2.05	.01	-.12	-.08	-.17	.01	.12	.08	.17	1	6	4	8
13	2.30	2.25	2.05	1.77	-.03	.05	-.12	-.14	.03	.05	.12	.14	1	2	6	8
14	2.23	1.92	1.99	1.97	-.17	-.12	.13	.01	.17	.12	.13	.01	8	6	7	1
15	1.97	1.65	1.78	2.13	.45	.14	.42	.38	.45	.14	.42	.38	23	8	24	18
16	1.88	1.91	2.06	2.42	.20	.06	.24	.17	.20	.06	.24	.17	11	3	11	7
17	2.13	1.90	2.11	1.66	.05	.05	.09	.03	.05	.05	.09	.03	2	3	4	2
18	1.66	2.21	1.97	1.98	.18	-.17	.18	-.16	.18	.17	.18	.16	11	8	9	8
19	1.82	2.01	1.73	1.93	.29	.31	.16	.08	.29	.31	.16	.08	16	16	9	4
20	1.71	2.06	1.91	1.75	.10	.48	.40	.23	.10	.48	.40	.23	6	23	21	13
21	2.13	1.62	2.20	1.72	.37	.32	.23	.26	.37	.32	.23	.26	18	20	10	15
22	1.84	1.92	2.08	2.11	.32	.22	.13	.09	.32	.22	.13	.09	18	11	6	4
23	2.26	1.75	2.15	1.95	.22	.17	.06	.22	.22	.17	.06	.22	10	10	3	11
24	1.85	2.10	1.83	2.17	.05	-.06	.15	.03	.05	.06	.15	.03	3	3	8	1
25	2.04	2.32	2.00	2.08	-.13	.04	.16	-.01	.13	.04	.16	.01	7	2	8	1
mean	1.96	1.94	2.01	1.99	.11	.12	.15	.11	.16	.17	.17	.15	8	9	8	8
SD	.21	.19	.18	.20	.17	.16	.14	.16	.12	.12	.11	.12	7.08	6.32	5.69	6.09

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A2-50-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	2.13	1.72	1.97	2.10	2.00	1.80	1.82	1.99	2.16	2.58	1.78	2.16	1.87	2.23	1.98	1.98	2.02	.23
2	1.67	1.74	1.96	1.62	1.52	2.44	1.97	1.99	1.81	1.81	2.37	2.75	1.93	1.82	2.23	1.90	1.97	.35
3	1.43	2.49	1.83	2.03	2.38	2.46	2.14	1.67	2.41	2.13	2.34	2.34	2.33	1.74	2.10	2.38	2.14	.33
4	2.28	2.28	2.31	1.99	2.06	2.31	2.24	2.39	2.40	2.30	2.03	2.21	2.19	2.32	2.25	2.16	2.23	.13
5	2.48	2.28	1.99	2.29	1.81	2.23	2.55	2.36	2.23	2.20	2.49	2.26	2.27	2.35	2.27	2.18	2.26	.20
6	1.77	1.24	2.17	2.40	1.94	2.52	1.81	1.99	1.61	2.08	1.84	1.79	2.05	1.95	1.92	1.80	1.93	.33
7	2.80	2.25	2.30	2.23	2.05	2.19	2.13	2.52	1.90	2.39	1.72	1.99	2.22	2.57	2.14	1.89	2.21	.27
8	1.96	1.77	2.25	1.82	1.48	1.72	1.91	1.92	2.45	2.35	1.78	2.46	1.77	2.08	2.21	1.90	1.99	.30
9	2.27	1.74	1.67	1.78	2.22	2.01	1.61	2.08	1.93	2.28	1.64	1.84	1.84	2.21	1.71	1.93	1.92	.24
10	2.45	2.34	2.36	2.64	1.73	2.19	2.45	1.75	1.61	1.75	1.84	2.13	2.39	1.98	2.31	1.73	2.10	.34
11	2.06	2.19	1.91	1.86	1.73	1.97	1.67	2.14	2.37	2.14	1.39	1.56	2.01	2.11	1.71	1.83	1.92	.27
12	1.69	1.17	2.23	1.99	2.59	1.97	1.33	1.54	2.35	2.16	2.72	1.86	1.71	1.80	1.81	2.55	1.97	.46
13	2.10	2.32	2.14	2.12	1.97	2.00	2.22	2.32	1.86	2.25	1.54	1.51	2.15	2.22	1.96	1.79	2.03	.26
14	1.76	2.04	1.74	1.65	1.81	1.96	1.58	1.50	1.96	2.06	1.56	1.73	1.88	1.77	1.68	1.78	1.78	.18
15	2.28	1.67	2.54	2.42	1.89	1.33	1.92	1.85	1.96	2.27	1.55	1.80	1.81	2.13	2.09	1.80	1.96	.35
16	1.72	1.86	2.03	1.68	2.29	1.96	1.98	1.85	2.04	2.12	2.14	2.35	1.83	1.90	2.12	2.16	2.00	.20
17	1.77	2.08	1.40	1.67	1.16	1.45	1.94	2.02	1.65	1.55	1.82	2.04	1.73	1.78	1.79	1.54	1.71	.27
18	2.16	1.93	1.48	1.42	1.94	1.58	1.80	1.92	1.97	1.94	1.73	2.17	1.64	2.01	1.82	1.88	1.84	.23
19	1.58	1.87	2.09	2.21	1.49	1.66	2.62	2.32	2.21	2.16	1.68	1.61	1.91	2.02	2.11	1.79	1.96	.34
20	1.76	1.97	1.91	2.08	2.41	2.26	1.56	2.09	1.91	1.81	2.32	2.03	2.10	1.89	1.83	2.21	2.01	.23
21	1.92	1.71	1.45	1.75	1.92	1.94	1.67	2.24	2.51	2.37	1.50	1.17	1.80	2.18	1.43	1.98	1.85	.37
22	1.83	1.84	1.55	1.41	2.04	2.38	1.85	2.01	2.55	2.37	1.97	1.98	1.88	2.07	1.79	2.19	1.98	.32
23	2.39	2.14	1.48	1.67	1.89	1.42	2.09	2.08	1.96	1.64	1.73	1.79	1.74	2.04	1.79	1.86	1.86	.28
24	2.11	2.25	2.12	2.24	1.44	1.77	1.84	1.82	2.15	2.09	2.03	1.57	2.09	2.01	1.84	1.87	1.95	.25
25	2.26	1.97	1.92	2.39	2.10	2.14	1.51	2.15	1.70	2.18	1.98	1.21	2.17	2.20	1.55	1.93	1.96	.32
												mean	1.97	2.05	1.94	1.96	1.98	
												SD	.21	.20	.23	.22	.13	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.92	2.27	2.20	2.12	.05	.04	.22	.14	.05	.04	.22	.14	2	2	10	7
2	2.02	1.82	2.03	2.01	.09	-.0	-.20	.11	.09	.0	.20	.11	4	0	10	5
3	2.20	1.73	2.06	1.97	-.13	-.01	-.04	-.41	.13	.01	.04	.41	6	1	2	21
4	1.99	2.23	1.95	2.04	-.20	-.09	-.30	-.12	.20	.09	.30	.12	10	4	16	6
5	2.20	2.10	1.95	2.01	-.07	-.25	-.32	-.17	.07	.25	.32	.17	3	12	16	8
6	2.18	2.02	1.87	1.87	.13	.07	-.05	.07	.13	.07	.05	.07	6	4	3	4
7	2.18	2.19	2.15	1.66	-.04	-.38	.01	-.23	.04	.38	.01	.23	2	17	0	14
8	1.99	1.93	2.43	1.98	.22	-.15	.22	.08	.22	.15	.22	.08	11	8	9	4
9	2.11	2.20	1.97	2.07	.27	-.01	.26	.14	.27	.01	.26	.14	13	0	13	7
10	2.30	1.99	2.27	1.79	-.09	.01	-.04	.06	.09	.01	.04	.06	4	0	2	4
11	1.90	2.05	2.05	1.86	-.11	-.06	.34	.03	.11	.06	.34	.03	6	3	16	2
12	1.73	2.07	2.00	2.38	.02	.27	.19	-.17	.02	.27	.19	.17	1	13	10	7
13	1.99	2.16	1.89	2.01	-.16	-.06	-.07	.22	.16	.06	.07	.22	8	3	4	11
14	1.86	1.95	1.97	1.94	-.02	.18	.29	.16	.02	.18	.29	.16	1	9	15	8
15	1.83	2.04	2.08	1.81	.02	-.09	-.01	.01	.02	.09	.01	.01	1	5	0	1
16	1.95	1.99	1.96	2.07	.12	.09	-.16	-.09	.12	.09	.16	.09	6	5	8	4
17	1.99	1.74	1.92	1.75	.26	-.04	.13	.21	.26	.04	.13	.21	13	2	7	12
18	1.94	1.79	1.97	2.01	.30	-.22	.15	.13	.30	.22	.15	.13	15	12	8	6
19	2.10	1.87	2.02	1.88	.19	-.15	-.09	.09	.19	.15	.09	.09	9	8	4	5
20	2.11	1.95	2.07	2.12	.01	.06	.24	-.09	.01	.06	.24	.09	0	3	11	4
21	1.80	2.07	2.02	2.14	.0	-.11	.59	.16	.0	.11	.59	.16	0	5	29	8
22	2.03	2.12	1.83	2.16	.15	.05	.04	-.03	.15	.05	.04	.03	8	2	2	1
23	1.92	1.90	1.92	2.07	.18	-.14	.13	.21	.18	.14	.13	.21	9	7	7	10
24	1.93	2.06	2.00	2.05	-.16	.05	.16	.18	.16	.05	.16	.18	8	3	8	9
25	2.16	2.20	1.60	1.97	-.01	.0	.05	.04	.01	.0	.05	.04	0	0	3	2
mean	2.01	2.02	2.01	1.99	.04	-.04	.07	.03	.12	.10	.17	.13	6	5	9	7
SD	.14	.15	.15	.15	.14	.13	.20	.15	.09	.09	.13	.08	4.31	4.49	6.45	4.33

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A3-50-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.45	1.34	1.44	1.51	1.69	2.41	2.27	2.30	1.66	2.26	1.83	1.85	1.75	2.00	1.85	1.73	1.83	.37
2	2.08	1.94	2.05	1.91	1.58	1.73	1.77	1.73	2.12	2.08	1.51	1.34	1.86	1.96	1.72	1.74	1.82	.24
3	2.30	2.20	1.60	2.50	2.13	2.24	2.07	2.17	1.95	1.79	2.07	2.05	2.31	2.09	1.91	2.05	2.09	.22
4	1.92	1.73	1.56	1.26	1.60	1.76	2.46	2.03	2.36	2.46	1.92	2.08	1.58	2.14	2.03	1.96	1.93	.36
5	2.04	1.63	1.67	2.11	2.17	1.89	2.27	2.27	1.87	1.87	1.79	1.90	1.88	2.06	1.95	1.94	1.96	.21
6	2.43	1.60	2.10	1.94	2.23	1.40	1.97	1.89	2.04	2.10	1.99	1.92	1.65	2.14	2.00	2.09	1.97	.26
7	2.19	1.79	1.83	2.22	1.51	2.43	2.02	2.12	2.08	2.66	1.94	2.02	2.15	2.32	1.96	1.84	2.07	.29
8	1.72	2.11	1.46	1.68	1.74	1.80	1.64	1.88	2.58	2.00	2.44	2.48	1.86	1.87	1.86	2.25	1.96	.35
9	1.87	1.61	1.12	2.06	2.38	2.43	1.56	1.63	1.75	1.61	2.18	1.73	2.03	1.70	1.47	2.10	1.83	.36
10	2.20	2.21	2.06	2.31	1.83	1.91	1.99	2.14	2.33	2.11	1.59	2.10	2.14	2.15	2.05	1.92	2.07	.20
11	1.81	1.68	1.80	1.84	2.06	1.65	1.60	1.72	2.22	2.39	1.74	2.36	1.72	1.97	1.92	2.01	1.91	.27
12	2.07	1.95	2.26	2.09	1.61	1.33	1.78	1.52	2.01	1.70	1.89	2.03	1.79	1.76	2.02	1.84	1.85	.26
13	1.93	2.28	2.01	2.10	1.59	1.78	1.93	2.03	2.08	1.90	1.52	1.90	2.05	1.95	1.95	1.73	1.92	.20
14	2.00	1.67	1.46	1.97	1.11	1.89	2.11	1.81	2.02	1.82	2.25	1.97	1.84	1.88	1.85	1.79	1.84	.29
15	2.07	2.00	1.41	1.68	2.31	1.95	2.57	2.46	2.29	2.45	2.02	1.19	1.88	2.33	1.72	2.21	2.03	.41
16	2.38	2.69	1.91	2.23	1.68	2.28	1.94	2.29	1.82	2.93	1.65	2.17	2.40	2.53	2.01	1.72	2.16	.37
17	2.17	2.60	2.16	2.05	2.37	1.78	1.93	1.67	2.00	1.73	1.84	1.81	2.14	1.86	1.97	2.07	2.01	.27
18	1.51	2.06	2.11	1.56	1.88	1.49	1.82	1.53	1.93	2.51	2.23	2.53	1.70	1.85	2.15	2.01	1.93	.36
19	1.94	2.00	2.06	1.81	1.96	1.49	1.94	2.06	2.02	2.51	2.14	2.15	1.77	2.17	2.05	2.04	2.01	.23
20	2.54	2.58	2.03	2.65	1.97	2.42	2.25	2.08	1.92	2.18	2.29	1.94	2.55	2.27	2.07	2.06	2.24	.25
21	2.08	2.33	1.44	2.21	1.48	1.95	2.49	1.52	1.69	2.08	1.82	2.13	2.16	1.89	2.02	1.66	1.94	.33
22	2.56	2.02	2.09	2.00	2.32	1.51	2.16	2.64	1.98	2.32	1.60	1.67	1.84	2.51	1.97	1.97	2.07	.34
23	1.79	1.23	2.34	2.10	2.05	2.33	2.44	2.19	1.81	1.60	2.07	1.57	1.89	1.86	2.12	1.98	1.96	.35
24	1.99	1.99	1.57	2.08	1.64	1.34	2.44	1.89	2.30	1.43	1.94	2.55	1.80	1.77	2.19	1.96	1.93	.37
25	1.46	2.05	2.15	2.00	2.51	2.10	2.17	1.74	2.62	1.72	2.22	2.29	2.05	1.64	2.20	2.45	2.09	.31
												mean	1.95	2.03	1.96	1.96	1.98	
												SD	.24	.23	.16	.18	.11	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.85	1.86	2.05	1.95	.10	-.14	.20	.22	.10	.14	.20	.22	5	8	10	11
2	2.12	2.07	2.04	2.01	.26	.11	.32	.27	.26	.11	.32	.27	12	5	16	14
3	2.04	2.00	2.00	1.92	-.27	-.09	.09	-.13	.27	.09	.09	.13	13	4	5	7
4	1.76	2.02	2.14	1.99	.18	-.12	.11	.03	.18	.12	.11	.03	10	6	5	2
5	1.90	2.02	2.00	2.03	.02	-.04	.05	.09	.02	.04	.05	.09	1	2	3	4
6	1.65	2.01	2.08	2.05	.0	-.13	.08	-.04	.0	.13	.08	.04	0	6	4	2
7	2.04	2.16	2.13	1.81	-.11	-.16	.17	-.03	.11	.16	.17	.03	5	8	8	2
8	2.04	1.91	2.13	2.02	.18	.04	.27	-.23	.18	.04	.27	.23	9	2	13	12
9	1.99	2.06	1.91	1.88	-.04	.36	.44	-.22	.04	.36	.44	.22	2	17	23	12
10	1.97	1.94	1.83	2.08	-.17	-.21	-.22	.16	.17	.21	.22	.16	9	11	12	8
11	1.88	2.03	1.87	2.03	.16	.06	-.05	.02	.16	.06	.05	.02	8	3	3	1
12	2.03	2.04	2.06	1.81	.24	.28	.04	-.03	.24	.28	.04	.03	12	14	2	1
13	2.10	1.98	1.93	1.98	.05	.03	-.02	.25	.05	.03	.02	.25	2	1	1	13
14	1.96	2.03	2.12	1.94	.12	.15	.27	.15	.12	.15	.27	.15	6	8	13	8
15	1.96	2.03	1.77	2.14	.08	-.30	.05	-.07	.08	.30	.05	.07	4	15	3	3
16	2.04	2.30	1.81	1.88	-.36	-.23	-.20	.16	.36	.23	.20	.16	18	10	11	9
17	2.06	2.01	2.16	1.90	-.08	.15	.19	-.17	.08	.15	.19	.17	4	8	9	9
18	2.00	1.91	2.16	2.11	.30	.06	.01	.10	.30	.06	.01	.10	15	3	0	5
19	1.90	2.02	2.05	2.06	.13	-.15	.0	.02	.13	.15	.0	.02	7	7	0	1
20	2.17	2.08	2.02	1.96	-.38	-.19	-.05	-.10	.38	.19	.05	.10	18	9	3	5
21	1.93	1.92	2.12	1.86	-.23	.03	.10	.20	.23	.03	.10	.20	12	1	5	11
22	2.01	2.21	1.96	2.05	.17	-.30	-.01	.08	.17	.30	.01	.08	8	13	1	4
23	2.00	1.99	1.97	2.07	.11	.13	-.15	.09	.11	.13	.15	.09	6	7	7	5
24	1.98	2.05	2.15	2.07	.18	.28	-.04	.11	.18	.28	.04	.11	9	14	2	5
25	2.17	1.83	2.09	2.05	.12	.19	-.11	-.40	.12	.19	.11	.40	6	10	5	20
mean	1.98	2.02	2.02	1.99	.03	-.01	.06	.02	.16	.16	.13	.14	8	8	6	7
SD	.12	.10	.11	.09	.19	.18	.16	.16	.10	.09	.11	.09	4.69	4.38	5.56	4.69

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A6-50-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.81	2.16	2.25	2.24	1.63	2.31	1.55	1.99	2.45	2.46	1.93	1.97	2.24	2.09	1.92	2.00	2.06	.29
2	2.08	2.20	1.68	1.77	2.11	1.93	2.05	2.32	2.27	1.95	2.05	2.32	1.97	2.12	2.02	2.14	2.06	.20
3	2.03	2.39	1.64	1.84	2.33	2.26	1.95	1.73	2.03	2.39	2.12	1.51	2.16	2.05	1.70	2.16	2.02	.28
4	2.13	2.21	1.98	2.47	1.72	1.70	2.04	1.70	2.43	1.90	2.37	1.87	2.13	1.91	1.96	2.17	2.04	.27
5	2.36	2.00	2.26	1.47	2.22	1.57	1.78	1.94	1.60	1.72	1.81	2.20	1.68	2.01	2.08	1.88	1.91	.29
6	2.17	2.26	1.95	2.13	2.09	2.16	1.59	1.60	1.73	1.84	2.17	2.32	2.18	1.87	1.95	2.00	2.00	.24
7	1.58	2.15	2.14	1.60	2.42	1.97	2.40	2.08	1.98	2.29	2.13	2.02	1.91	1.98	2.19	2.18	2.06	.25
8	1.99	1.87	1.85	2.10	2.31	2.02	1.81	2.02	2.21	2.27	1.62	1.54	2.00	2.09	1.73	2.05	1.97	.23
9	1.90	1.93	2.33	2.07	2.29	1.74	1.91	2.06	1.80	1.76	1.75	1.86	1.91	1.91	2.03	1.95	1.95	.19
10	2.41	1.58	1.48	1.77	2.11	1.78	1.92	2.43	1.40	1.89	2.10	1.52	1.71	2.24	1.64	1.87	1.87	.33
11	2.31	2.39	2.06	1.94	1.98	1.94	1.97	1.81	2.15	1.45	2.34	2.28	2.09	1.86	2.10	2.16	2.05	.26
12	2.23	2.72	2.66	2.68	2.42	2.20	2.25	2.08	2.35	1.66	1.43	1.67	2.53	1.99	2.19	2.07	2.20	.40
13	2.06	2.01	2.20	1.93	2.60	1.88	1.89	1.83	1.90	1.85	2.20	1.70	1.94	1.91	1.93	2.23	2.00	.23
14	1.84	1.90	2.25	2.61	2.05	2.48	1.72	2.36	2.43	2.15	1.52	2.12	2.33	2.12	2.03	2.00	2.12	.32
15	1.52	2.14	2.15	1.76	2.11	2.28	2.00	1.76	2.18	2.85	2.03	1.85	2.06	2.04	2.00	2.11	2.05	.32
16	1.94	2.11	2.09	2.28	2.12	1.61	2.18	2.43	1.89	1.69	2.38	1.63	2.00	2.02	1.97	2.13	2.03	.27
17	1.99	1.61	2.25	1.70	2.40	1.74	2.53	2.01	1.99	1.83	1.77	1.83	1.68	1.94	2.20	2.05	1.97	.28
18	2.41	2.10	2.57	2.30	2.10	1.80	2.11	2.28	2.30	1.95	1.91	2.29	2.07	2.21	2.32	2.10	2.18	.21
19	1.63	2.13	2.25	2.06	2.75	2.58	1.91	2.13	2.01	1.83	1.59	1.44	2.26	1.86	1.87	2.12	2.03	.37
20	1.50	2.11	2.23	1.79	1.97	1.86	1.95	2.63	1.87	1.86	1.93	2.21	1.92	2.00	2.13	1.92	1.99	.27
21	1.92	1.74	1.99	1.90	2.28	1.62	1.62	2.00	2.24	2.38	2.10	1.97	1.75	2.10	1.86	2.21	1.98	.23
22	1.81	2.00	1.85	2.35	1.71	2.20	1.92	1.69	1.61	2.07	2.17	1.79	2.18	1.86	1.85	1.83	1.93	.22
23	1.55	2.05	1.94	2.24	1.63	2.40	1.90	1.73	1.92	2.10	1.49	2.27	2.23	1.79	2.04	1.68	1.94	.28
24	2.01	1.78	2.18	2.19	1.59	2.11	1.95	1.80	1.25	2.14	2.10	1.69	2.03	1.98	1.94	1.65	1.90	.27
25	2.46	2.00	1.90	2.17	2.04	2.21	2.00	2.06	2.14	2.33	1.77	1.94	2.13	2.28	1.95	1.98	2.09	.18
												mean	2.04	2.01	1.98	2.03	2.02	
												SD	.20	.12	.16	.15	.08	

	True sep: (tax mean - comp mean)				algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	2.13	2.14	1.91	2.00	-.11	.05	-.01	-.0	.11	.05	.01	.0	5	2	1	0
2	2.00	1.96	2.01	1.94	.03	-.16	-.01	-.20	.03	.16	.01	.20	2	8	0	10
3	2.13	1.91	1.92	2.03	-.03	-.14	.22	-.13	.03	.14	.22	.13	2	7	11	6
4	2.05	1.93	1.96	2.04	-.08	.02	-.0	-.13	.08	.02	.0	.13	4	1	0	7
5	1.91	1.96	1.93	1.96	.23	-.05	-.15	.08	.23	.05	.15	.08	12	2	8	4
6	2.05	1.97	2.02	1.92	-.13	.10	.07	-.08	.13	.10	.07	.08	7	5	3	4
7	2.03	1.96	1.99	1.93	.12	-.02	-.20	-.25	.12	.02	.20	.25	6	1	10	13
8	1.94	2.05	2.06	2.17	-.06	-.04	.33	.12	.06	.04	.33	.12	3	2	16	6
9	1.90	1.87	2.11	2.06	-.01	-.04	.08	.11	.01	.04	.08	.11	1	2	4	6
10	1.94	1.94	1.91	2.01	.23	-.30	.27	.14	.23	.30	.27	.14	12	16	14	7
11	1.97	2.00	1.86	1.91	-.12	.14	-.24	-.25	.12	.14	.24	.25	6	7	13	13
12	2.01	1.96	1.92	2.03	-.52	-.03	-.27	-.04	.52	.03	.27	.04	26	2	14	2
13	1.93	2.01	1.91	2.05	-.01	.10	-.02	-.18	.01	.10	.02	.18	1	5	1	9
14	2.11	2.03	1.92	2.05	-.22	-.09	-.11	.05	.22	.09	.11	.05	10	4	6	2
15	2.07	1.95	2.00	2.10	.01	-.09	.0	-.01	.01	.09	.0	.01	0	5	0	0
16	2.00	1.99	2.01	2.02	.0	-.03	.04	-.11	.0	.03	.04	.11	0	2	2	5
17	1.97	1.95	1.99	1.93	.29	.01	-.21	-.12	.29	.01	.21	.12	15	0	11	6
18	2.09	2.05	1.90	2.16	.02	-.16	-.42	.06	.02	.16	.42	.06	1	8	22	3
19	2.16	1.93	1.89	2.07	-.10	.07	.02	-.05	.10	.07	.02	.05	4	3	1	2
20	2.03	1.98	2.04	1.92	.11	-.02	-.09	-.0	.11	.02	.09	.0	5	1	4	0
21	1.79	2.08	1.93	2.04	.04	-.02	.07	-.17	.04	.02	.07	.17	2	1	4	8
22	2.07	1.92	1.91	2.01	-.11	.06	.06	.18	.11	.06	.06	.18	5	3	3	9
23	2.07	2.04	2.02	1.80	-.16	.25	-.02	.12	.16	.25	.02	.12	8	12	1	7
24	1.95	2.10	2.07	2.04	-.08	.12	.13	.39	.08	.12	.13	.39	4	6	6	19
25	2.08	1.99	2.02	2.09	-.05	-.29	.07	.11	.05	.29	.07	.11	2	15	4	5
mean	2.02	1.99	1.97	2.01	-.03	-.02	-.02	-.01	.11	.10	.12	.12	6	5	6	6
SD	.08	.06	.06	.08	.16	.12	.17	.15	.11	.08	.11	.09	5.68	4.16	5.89	4.37

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A3-25-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.40	1.92	2.05	1.81	1.74	1.51	1.74	1.73	1.36	1.65	2.00	1.54	1.75	1.59	1.78	1.70	1.70	.21
2	1.42	1.95	2.35	1.51	1.74	1.68	2.04	2.38	1.93	2.45	1.69	1.98	1.71	2.08	2.12	1.79	1.93	.32
3	2.21	1.85	1.54	1.36	2.11	1.81	2.22	1.79	2.10	1.51	1.37	1.37	1.67	1.84	1.71	1.86	1.77	.32
4	2.30	2.51	1.74	2.24	1.55	2.25	2.00	1.07	1.93	2.02	1.10	2.13	2.33	1.80	1.96	1.53	1.90	.44
5	-0.03	1.13	2.38	1.46	2.03	2.19	1.70	1.18	3.16	2.25	1.97	2.87	1.59	1.13	2.32	2.39	1.86	.82
6	2.41	2.17	2.08	0.58	2.01	2.25	1.09	1.98	2.14	2.89	1.60	1.43	1.67	2.43	1.53	1.92	1.89	.60
7	1.30	1.80	1.05	2.37	2.17	1.34	2.81	2.67	2.31	1.87	1.56	2.10	1.84	1.95	1.99	2.01	1.95	.53
8	2.87	2.14	2.48	2.09	1.51	1.72	1.78	1.22	0.79	0.77	1.95	2.01	1.98	1.62	2.09	1.42	1.78	.60
9	2.26	1.79	2.31	1.96	2.10	1.12	2.11	2.16	1.90	1.55	1.42	1.48	1.62	1.99	1.97	1.81	1.85	.36
10	2.19	1.58	1.81	1.56	2.29	2.09	1.63	1.84	2.31	2.70	2.51	2.00	1.74	2.24	1.81	2.37	2.04	.36
11	2.84	2.13	2.06	1.92	2.31	2.14	2.07	1.76	2.31	2.19	1.68	1.84	2.06	2.26	1.99	2.10	2.10	.29
12	0.86	1.42	1.34	2.21	1.70	2.21	1.86	1.81	1.97	1.66	1.77	1.38	1.95	1.44	1.53	1.81	1.68	.37
13	1.98	1.34	2.37	2.93	1.73	1.35	1.90	1.98	1.87	1.56	2.55	1.57	1.87	1.84	1.95	2.05	1.93	.46
14	1.71	1.70	2.01	2.27	1.57	1.86	1.61	1.33	2.06	2.25	1.62	1.80	1.94	1.76	1.81	1.75	1.82	.27
15	2.53	1.41	1.16	2.50	2.24	2.14	2.23	1.95	2.15	1.87	0.71	1.90	2.02	2.12	1.76	1.70	1.90	.53
16	2.04	1.84	2.31	2.09	2.78	2.01	2.28	1.28	2.45	2.58	1.71	2.06	1.98	1.97	2.22	2.31	2.12	.39
17	1.48	2.20	1.53	1.15	1.64	2.06	0.92	1.90	2.81	2.99	1.90	1.63	1.80	2.12	1.36	2.12	1.85	.58
18	1.66	1.93	1.88	2.05	2.38	1.88	1.61	2.07	2.01	1.55	2.28	1.67	1.95	1.76	1.72	2.22	1.91	.25
19	2.56	1.22	1.43	1.06	1.71	2.28	2.18	2.17	1.60	2.21	1.65	1.66	1.52	2.31	1.76	1.65	1.81	.44
20	2.49	1.62	2.56	1.70	1.80	1.57	1.88	1.97	2.03	2.20	1.88	1.71	1.63	2.22	2.05	1.90	1.95	.31
21	1.71	1.35	2.17	1.34	1.52	1.01	1.61	2.14	1.51	1.97	1.47	1.34	1.23	1.94	1.71	1.50	1.60	.33
22	1.57	1.66	1.50	1.99	1.19	1.96	1.63	1.47	2.24	1.39	2.23	2.29	1.87	1.48	1.81	1.89	1.76	.35
23	1.86	2.03	1.44	2.12	1.87	1.93	2.57	2.26	1.94	1.59	1.81	1.86	2.03	1.90	1.96	1.87	1.94	.28
24	1.47	1.86	1.34	2.12	2.14	2.19	1.27	1.90	1.19	1.32	1.99	1.96	2.06	1.56	1.52	1.77	1.73	.36
25	1.49	0.82	2.23	2.18	2.38	2.73	2.53	2.33	1.76	1.00	1.07	1.46	1.91	1.61	2.07	1.74	1.83	.62
												mean	1.83	1.88	1.86	1.89	1.86	
												SD	.22	.31	.23	.25	.12	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.89	1.89	2.06	1.89	.14	.30	.28	.19	.14	.30	.28	.19	8	16	14	10
2	1.88	2.17	2.11	1.87	.17	.09	-.01	.08	.17	.09	.01	.08	9	4	1	4
3	2.02	2.08	2.08	1.94	.35	.24	.37	.08	.35	.24	.37	.08	17	12	18	4
4	2.18	2.00	1.98	1.90	-.15	.20	.02	.37	.15	.20	.02	.37	7	10	1	20
5	2.06	2.03	1.98	2.11	.47	.90	-.34	-.28	.47	.90	.34	.28	23	44	17	13
6	2.09	2.27	1.92	1.97	.42	-.16	.39	.05	.42	.16	.39	.05	20	7	20	3
7	1.96	2.02	2.06	1.97	.12	.07	.07	-.04	.12	.07	.07	.04	6	4	4	2
8	1.92	1.83	2.00	1.94	-.06	.21	-.09	.52	.06	.21	.09	.52	3	11	4	27
9	1.92	2.00	2.04	1.83	.30	.01	.07	.02	.30	.01	.07	.02	15	1	4	1
10	1.86	2.12	1.95	2.02	.12	-.12	.14	-.35	.12	.12	.14	.35	6	6	7	17
11	2.20	2.07	2.06	1.97	.14	-.19	.07	-.13	.14	.19	.07	.13	6	9	3	7
12	1.85	1.91	1.64	2.00	-.10	.47	.11	.19	.10	.47	.11	.19	5	24	7	9
13	1.95	2.15	2.02	2.09	.08	.31	.07	.04	.08	.31	.07	.04	4	14	4	2
14	2.02	1.77	2.08	2.06	.08	.01	.27	.31	.08	.01	.27	.31	4	0	13	15
15	2.26	2.13	1.87	2.03	.24	.01	.11	.33	.24	.01	.11	.33	11	1	6	16
16	1.81	1.96	2.23	1.96	-.17	-.01	.01	-.35	.17	.01	.01	.35	9	0	1	18
17	2.07	2.14	1.83	2.03	.27	.02	.47	-.09	.27	.02	.47	.09	13	1	26	4
18	2.02	2.02	1.87	2.06	.07	.26	.15	-.16	.07	.26	.15	.16	3	13	8	8
19	1.80	2.01	2.01	1.99	.28	-.30	.25	.34	.28	.30	.25	.34	16	15	13	17
20	2.05	2.08	2.01	2.08	.42	-.14	-.04	.18	.42	.14	.04	.18	20	7	2	8
21	1.86	2.06	1.89	1.89	.63	.12	.18	.39	.63	.12	.18	.39	34	6	10	21
22	1.96	1.84	1.91	1.95	.09	.36	.10	.06	.09	.36	.10	.06	5	20	5	3
23	2.08	1.96	1.85	2.07	.05	.06	-.11	.20	.05	.06	.11	.20	3	3	6	10
24	2.11	1.81	1.83	1.89	.05	.25	.31	.12	.05	.25	.31	.12	3	14	17	6
25	2.06	1.95	1.96	2.01	.15	.34	-.11	.27	.15	.34	.11	.27	7	18	6	14
mean	2.00	2.01	1.97	1.98	.17	.13	.11	.09	.20	.21	.17	.21	10	10	9	10
SD	.12	.12	.12	.07	.19	.25	.18	.23	.15	.19	.13	.13	7.61	9.51	6.62	6.86

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A6-25-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.93	2.16	2.10	2.51	1.99	1.77	1.70	0.99	2.00	2.07	1.87	3.12	2.15	1.66	2.31	1.95	2.02	.48
2	0.96	1.73	2.26	2.26	1.34	1.70	1.88	1.32	1.58	2.23	2.04	2.11	1.90	1.50	2.08	1.65	1.78	.41
3	2.15	2.00	2.16	1.98	2.13	1.82	1.31	1.25	2.00	1.35	2.29	1.85	1.93	1.58	1.77	2.14	1.86	.34
4	2.33	1.99	1.78	1.51	1.74	2.64	1.95	1.63	1.67	1.46	1.79	2.37	2.05	1.81	2.03	1.73	1.91	.35
5	0.67	2.45	1.21	2.33	1.67	2.01	1.75	1.96	1.81	2.61	1.74	1.43	2.26	1.75	1.46	1.74	1.80	.52
6	1.89	2.70	2.07	1.60	2.13	1.51	1.66	2.43	2.41	2.13	2.03	1.56	1.94	2.15	1.76	2.19	2.01	.37
7	2.50	1.99	1.58	1.28	2.14	1.79	1.46	1.65	1.95	1.73	2.70	1.68	1.69	1.96	1.57	2.26	1.87	.40
8	2.12	2.31	2.42	2.75	1.74	1.82	1.56	1.74	1.73	1.75	1.83	2.60	2.29	1.87	2.19	1.77	2.03	.38
9	1.75	1.75	1.83	1.50	1.73	2.40	1.52	2.22	1.58	0.84	2.20	1.82	1.88	1.60	1.72	1.84	1.76	.39
10	1.86	2.20	2.11	2.27	1.72	2.22	1.87	1.15	1.62	1.85	1.73	1.89	2.23	1.62	1.96	1.69	1.87	.30
11	1.72	1.98	1.94	2.31	1.92	1.99	1.52	2.37	1.84	2.09	1.78	2.09	2.09	2.06	1.85	1.85	1.96	.23
12	1.56	2.10	2.39	2.48	1.60	1.87	1.65	1.99	1.99	1.55	2.51	2.16	2.15	1.70	2.07	2.03	1.99	.34
13	2.03	2.02	1.84	2.61	2.28	2.20	1.97	2.20	1.42	1.42	2.24	1.96	2.28	1.88	1.92	1.98	2.02	.33
14	1.77	1.00	1.61	1.51	2.83	1.81	1.79	2.03	1.94	2.07	2.66	2.92	1.44	1.96	2.11	2.48	2.00	.54
15	2.41	2.67	2.17	1.79	2.21	1.89	1.51	2.10	1.64	2.03	2.27	1.85	2.12	2.18	1.84	2.04	2.05	.32
16	2.02	1.74	2.34	1.83	1.92	1.74	1.56	1.77	2.05	2.15	2.04	2.15	1.77	1.98	2.02	2.00	1.94	.21
17	2.11	1.90	2.33	1.30	1.82	2.16	1.93	1.61	2.44	2.03	1.80	1.84	1.79	1.92	2.03	2.02	1.94	.30
18	2.31	1.73	2.51	2.27	1.67	2.49	1.48	2.38	1.84	1.67	1.69	1.50	2.16	2.12	1.83	1.73	1.96	.38
19	1.57	1.44	2.51	1.35	2.02	2.40	1.57	1.23	1.72	2.01	2.57	1.65	1.73	1.60	1.91	2.10	1.84	.44
20	2.26	2.29	1.95	2.03	1.87	1.77	2.03	1.78	1.92	1.06	2.65	2.26	2.03	1.70	2.08	2.15	1.99	.37
21	1.55	1.65	2.45	2.02	1.97	2.52	1.05	1.16	1.98	1.52	0.93	1.60	2.06	1.41	1.70	1.63	1.70	.49
22	1.89	1.85	1.87	0.23	2.32	1.51	2.07	2.19	2.12	2.37	1.95	1.78	1.20	2.15	1.91	2.13	1.85	.54
23	1.33	1.67	2.50	1.70	2.18	1.84	2.09	1.80	1.71	2.31	1.85	1.91	1.74	1.81	2.17	1.91	1.91	.30
24	2.17	2.08	1.34	1.71	1.63	2.16	2.17	1.69	2.24	1.73	2.19	1.72	1.98	1.86	1.74	2.02	1.90	.28
25	1.87	2.62	1.76	2.08	2.41	2.33	2.12	1.73	1.68	1.58	1.82	2.04	2.34	1.73	1.97	1.97	2.00	.31
												mean	1.97	1.82	1.92	1.96	1.92	
												SD	.27	.21	.19	.20	.09	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	2.00	2.08	1.99	2.06	-.15	.42	-.32	.11	.15	.42	.32	.11	7	20	16	5
2	2.10	1.93	1.99	1.80	.20	.43	-.09	.15	.20	.43	.09	.15	10	22	5	8
3	2.03	2.13	1.80	2.01	.10	.55	.03	-.13	.10	.55	.03	.13	5	26	1	6
4	2.15	2.05	2.09	1.94	.10	.24	.06	.21	.10	.24	.06	.21	5	12	3	11
5	2.04	1.94	1.84	2.01	-.22	.19	.38	.27	.22	.19	.38	.27	11	10	20	13
6	1.95	2.04	2.01	2.00	.01	-.11	.25	-.19	.01	.11	.25	.19	1	5	12	9
7	1.95	2.13	1.90	2.16	.26	.17	.33	-.10	.26	.17	.33	.10	14	8	17	5
8	2.14	2.02	1.99	1.86	-.15	.15	-.20	.09	.15	.15	.20	.09	7	7	10	5
9	2.01	1.99	1.94	1.99	.13	.39	.22	.15	.13	.39	.22	.15	6	19	11	8
10	1.91	2.02	1.98	1.99	-.32	.40	.02	.30	.32	.40	.02	.30	17	20	1	15
11	2.15	2.01	1.93	1.94	.06	-.05	.08	.09	.06	.05	.08	.09	3	2	4	5
12	1.99	1.98	2.22	1.98	-.16	.28	.15	-.05	.16	.28	.15	.05	8	14	7	3
13	2.00	1.95	1.99	2.04	-.28	.07	.07	.06	.28	.07	.07	.06	14	3	3	3
14	1.81	1.96	1.86	2.12	.37	.0	-.25	-.36	.37	.0	.25	.36	20	0	13	17
15	2.01	2.10	2.02	2.19	-.11	-.08	.18	.15	.11	.08	.18	.15	5	4	9	7
16	2.01	1.92	1.78	1.94	.24	-.06	-.24	-.06	.24	.06	.24	.06	12	3	13	3
17	1.96	2.13	2.01	2.05	.17	.21	-.02	.03	.17	.21	.02	.03	9	10	1	1
18	1.99	2.03	1.92	1.87	-.17	-.09	.09	.14	.17	.09	.09	.14	9	4	5	7
19	1.79	1.93	1.99	2.03	.06	.33	.08	-.07	.06	.33	.08	.07	3	17	4	4
20	1.99	1.95	2.01	2.01	-.04	.25	-.07	-.14	.04	.25	.07	.14	2	13	3	7
21	2.05	1.92	1.89	2.01	-.01	.51	.19	.38	.01	.51	.19	.38	1	27	10	19
22	1.85	2.19	1.86	1.95	.65	.04	-.05	-.18	.65	.04	.05	.18	35	2	3	9
23	1.90	1.92	2.05	1.99	.16	.11	-.12	.08	.16	.11	.12	.08	9	6	6	4
24	1.99	2.03	1.69	2.04	.01	.17	-.05	.02	.01	.17	.05	.02	0	8	3	1
25	2.11	1.98	1.89	2.09	-.23	.25	-.08	.12	.23	.25	.08	.12	11	13	4	6
mean	2.00	2.01	1.95	2.00	.03	.19	.02	.04	.18	.22	.14	.15	9	11	7	7
SD	.09	.08	.11	.09	.22	.19	.17	.17	.14	.15	.10	.09	7.33	7.60	5.37	4.60

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A3-10-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.39	1.38	2.42	2.54	0.59	1.16	2.57	1.36	1.84	2.12	1.75	1.84	1.69	1.62	2.28	1.39	1.75	.58
2	-1.40	2.65	1.04	1.00	3.41	1.42	0.08	3.45	1.67	3.43	0.46	0.05	1.69	1.83	0.39	1.85	1.44	1.49
3	2.57	2.69	0.13	-1.51	2.04	1.23	0.80	1.47	2.99	-0.50	2.90	2.18	0.80	1.18	1.04	2.64	1.42	1.38
4	1.53	2.45	1.33	2.18	1.45	1.14	2.84	1.63	1.53	0.91	1.04	2.19	1.92	1.36	2.12	1.34	1.69	.57
5	0.77	0.56	0.51	1.80	3.19	2.17	1.53	2.41	1.41	1.55	0.84	1.59	1.51	1.58	1.21	1.81	1.53	.77
6	1.08	2.00	0.72	0.17	1.70	2.03	1.55	1.79	1.74	2.16	1.78	0.95	1.40	1.68	1.07	1.74	1.47	.58
7	1.39	1.02	3.65	3.52	0.60	-0.46	1.41	-0.34	1.37	3.74	1.65	-0.11	1.36	1.60	1.65	1.21	1.45	1.43
8	1.50	1.46	-0.20	3.18	2.84	3.78	1.12	0.26	1.99	2.00	2.25	0.02	2.81	1.25	0.31	2.36	1.68	1.20
9	2.67	0.78	0.87	2.45	1.36	2.91	-0.41	0.21	1.97	2.27	1.38	2.01	2.05	1.72	0.82	1.57	1.54	.98
10	1.45	1.69	1.97	1.68	0.72	1.16	1.11	1.03	1.77	1.18	1.34	1.60	1.51	1.22	1.56	1.28	1.39	.35
11	1.41	1.77	1.90	0.37	2.57	1.28	1.54	1.23	1.45	1.94	1.59	0.77	1.14	1.53	1.40	1.87	1.49	.54
12	0.37	0.15	0.56	0.55	1.68	1.19	3.00	4.30	1.39	1.89	3.30	2.63	0.63	2.19	2.06	2.12	1.75	1.26
13	1.17	0.67	1.39	2.48	-0.14	2.38	1.75	2.05	2.53	4.92	0.11	0.19	1.84	2.71	1.11	0.83	1.63	1.35
14	2.19	1.19	3.06	-0.98	-0.16	-0.70	3.07	1.68	0.72	2.38	3.06	1.56	-0.16	2.08	2.56	1.21	1.42	1.38
15	3.97	2.86	0.81	0.96	0.06	1.94	4.87	1.35	-0.59	1.30	0.97	1.31	1.92	2.21	2.33	0.15	1.65	1.49
16	1.70	1.74	1.12	0.77	1.00	0.30	1.12	1.56	1.20	0.96	1.61	1.42	0.94	1.41	1.22	1.27	1.21	.41
17	2.22	1.74	2.15	0.82	1.08	1.66	2.16	0.85	0.69	2.41	-0.52	2.95	1.41	1.83	2.42	0.42	1.52	.92
18	1.61	0.18	3.88	3.12	0.90	-0.33	2.28	3.11	0.48	2.07	1.98	-0.06	0.99	2.26	2.03	1.12	1.60	1.32
19	1.53	1.70	1.10	1.48	0.70	1.52	0.79	1.41	1.24	1.45	1.95	2.13	1.57	1.46	1.34	1.30	1.42	.40
20	2.34	2.10	1.09	1.37	1.08	1.50	1.24	0.85	2.52	0.80	0.52	0.49	1.66	1.33	0.94	1.37	1.33	.65
21	3.36	2.20	1.40	1.86	-0.07	1.50	0.40	4.25	0.11	0.32	1.46	1.22	1.85	2.64	1.01	0.50	1.50	1.25
22	2.06	2.03	1.09	0.93	1.59	1.82	-0.25	1.82	2.18	1.95	1.78	3.19	1.59	1.94	1.34	1.85	1.68	.79
23	2.18	-3.43	6.59	-1.25	6.30	-10.25	9.77	1.39	0.16	11.86	23.09	6.13	-4.98	5.14	7.50	9.85	4.38	8.09
24	1.34	-0.73	-5.35	5.23	-5.89	-2.92	-1.16	-0.26	-3.25	1.20	7.10	1.71	0.53	0.76	-1.60	-0.68	-0.25	3.74
25	1.78	4.23	-1.47	5.18	8.15	2.05	-1.46	-3.28	1.15	-1.43	4.83	1.86	3.82	-0.98	-0.36	4.71	1.80	3.23
												mean	1.26	1.74	1.51	1.80	1.58	
												SD	1.47	.98	1.52	1.90	.68	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.97	2.34	2.06	2.12	.28	.72	-.22	.73	.28	.72	.22	.73	14	31	11	34
2	1.72	2.17	1.86	1.87	.03	.34	1.47	.02	.03	.34	1.47	.02	2	16	79	1
3	1.92	2.32	1.93	1.99	1.12	1.14	.89	-.65	1.12	1.14	.89	.65	58	49	46	33
4	2.32	1.87	2.17	1.98	.40	.51	.05	.64	.40	.51	.05	.64	17	27	2	32
5	1.87	2.03	2.22	1.94	.36	.45	1.01	.13	.36	.45	1.01	.13	19	22	45	7
6	2.03	2.30	1.95	2.11	.63	.62	.88	.37	.63	.62	.88	.37	31	27	45	18
7	2.07	1.92	1.96	1.45	.71	.32	.31	.24	.71	.32	.31	.24	34	17	16	17
8	2.17	2.12	1.82	2.20	-.64	.87	1.51	-.16	.64	.87	1.51	.16	29	41	83	7
9	2.06	2.44	2.06	1.98	.01	.72	1.24	.41	.01	.72	1.24	.41	1	30	60	21
10	2.05	2.23	1.99	1.65	.54	1.01	.43	.37	.54	1.01	.43	.37	26	45	22	23
11	1.74	1.93	2.31	2.34	.60	.40	.91	.47	.60	.40	.91	.47	34	21	39	20
12	1.64	2.14	2.03	2.18	1.01	-.05	-.03	.06	1.01	.05	.03	.06	62	2	2	3
13	2.07	2.35	2.15	2.11	.23	-.36	1.04	1.28	.23	.36	1.04	1.28	11	15	48	61
14	2.01	1.97	1.69	1.90	2.17	-.11	-.87	.69	2.17	.11	.87	.69	108	6	52	36
15	2.09	2.11	2.00	1.70	.17	-.10	-.33	1.55	.17	.10	.33	1.55	8	5	17	91
16	1.92	2.10	1.95	1.61	.98	.69	.73	.34	.98	.69	.73	.34	51	33	37	21
17	1.82	1.91	2.07	1.93	.41	.08	-.35	1.51	.41	.08	.35	1.51	23	4	17	78
18	1.67	2.20	2.05	2.06	.68	-.06	.02	.94	.68	.06	.02	.94	41	3	1	46
19	2.01	1.82	1.89	1.95	.44	.36	.55	.65	.44	.36	.55	.65	22	20	29	34
20	2.01	2.05	1.79	2.10	.35	.72	.85	.73	.35	.72	.85	.73	18	35	47	35
21	2.21	2.20	1.67	2.00	.36	-.44	.66	1.50	.36	.44	.66	1.50	16	20	40	75
22	1.86	2.11	2.13	1.89	.27	.17	.79	.04	.27	.17	.79	.04	14	8	37	2
23	2.05	1.73	1.98	2.01	7.03	-3.41	-5.52	-7.84	7.03	3.41	5.52	7.84	343	197	279	390
24	1.64	2.22	1.99	2.04	1.11	1.46	3.59	2.72	1.11	1.46	3.59	2.72	68	66	180	133
25	2.03	2.22	2.16	1.79	-1.79	3.20	2.52	-2.92	1.79	3.20	2.52	2.92	88	144	117	163
mean	1.96	2.11	2.00	1.96	.70	.37	.48	.15	.89	.73	1.07	1.08	46	35	54	55
SD	.17	.18	.15	.20	1.46	1.05	1.53	1.90	1.35	.83	1.19	1.57	65.99	43.42	59.72	78.90

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A6-10-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	4.55	4.00	1.76	2.53	2.48	0.43	-0.77	1.33	0.72	4.17	0.27	0.19	2.32	3.35	0.39	1.16	1.81	1.68
2	1.35	1.75	2.96	3.19	3.24	3.42	0.41	1.10	1.76	0.55	0.92	1.86	2.79	1.00	1.74	1.97	1.88	1.04
3	2.61	2.02	1.01	1.92	1.09	0.62	1.12	1.49	2.22	2.92	3.15	1.60	1.52	2.34	1.24	2.15	1.81	.77
4	-0.49	2.29	1.38	0.52	3.80	2.37	2.98	2.10	2.00	1.18	1.61	1.97	1.73	0.93	2.11	2.47	1.81	1.06
5	2.84	2.18	1.48	0.72	2.68	3.04	1.58	1.36	2.46	2.04	1.27	2.27	1.98	2.08	1.78	2.14	1.99	.68
6	3.83	3.21	1.79	1.36	0.96	-0.39	1.53	0.82	2.29	1.29	0.57	1.67	1.39	1.98	1.66	1.27	1.58	1.09
7	2.85	-0.14	1.75	2.37	1.83	3.11	1.27	2.13	1.44	0.59	1.74	1.40	1.78	1.86	1.47	1.67	1.70	.86
8	2.16	1.48	0.87	1.62	2.03	1.96	2.27	1.62	2.06	1.43	1.49	1.40	1.69	1.74	1.51	1.86	1.70	.39
9	2.39	2.90	1.67	1.30	1.27	4.20	1.96	0.97	1.97	1.08	0.61	1.74	2.80	1.48	1.79	1.28	1.84	.94
10	0.65	2.59	1.29	1.34	1.59	1.12	0.83	1.14	2.65	1.50	2.17	1.88	1.68	1.10	1.33	2.14	1.56	.62
11	2.55	2.30	2.98	2.58	1.07	0.98	0.73	1.42	1.39	0.59	1.44	1.46	1.95	1.52	1.72	1.30	1.62	.75
12	-0.28	2.67	1.25	2.32	4.21	1.62	0.45	1.61	1.18	1.39	2.45	3.51	2.20	0.91	1.74	2.61	1.87	1.20
13	1.23	2.02	1.73	3.01	1.07	0.75	1.27	1.24	1.77	1.42	0.74	1.53	1.93	1.30	1.51	1.19	1.48	.59
14	0.90	1.73	0.91	3.36	2.67	3.26	-0.39	1.42	1.73	1.36	3.33	3.50	2.78	1.23	1.34	2.58	1.98	1.19
15	0.34	1.35	2.00	1.76	2.28	-0.27	1.23	2.31	3.00	1.68	-0.62	0.55	0.95	1.44	1.26	1.55	1.30	1.06
16	1.48	2.14	1.68	1.24	2.51	3.12	-0.50	1.50	1.30	2.19	1.89	1.58	2.17	1.72	0.92	1.90	1.68	.84
17	1.10	2.48	3.06	3.85	1.15	1.26	0.94	1.84	2.44	2.42	1.35	0.61	2.53	1.79	1.54	1.65	1.88	.94
18	2.04	0.99	1.97	0.74	1.60	2.06	1.92	2.28	1.71	1.56	3.05	1.28	1.26	1.96	1.72	2.12	1.77	.58
19	1.22	3.26	1.96	3.40	1.38	0.00	2.54	2.45	0.63	1.25	2.20	2.18	2.22	1.64	2.23	1.40	1.87	.97
20	2.67	4.93	4.47	6.16	1.64	0.62	-0.37	1.49	-1.76	0.84	2.13	3.34	3.90	1.67	2.48	0.67	2.18	2.18
21	2.38	1.72	1.79	0.69	1.75	1.90	2.12	2.05	1.67	1.39	1.20	1.32	1.44	1.94	1.74	1.54	1.67	.44
22	1.18	0.99	0.62	2.67	3.80	2.12	2.60	1.35	3.45	1.35	2.60	1.32	1.93	1.29	1.51	3.28	2.00	.98
23	1.44	1.55	1.88	1.69	1.62	0.30	2.94	3.41	1.04	1.27	1.94	1.95	1.18	2.04	2.26	1.53	1.75	.78
24	1.54	1.43	2.23	2.18	1.74	1.75	1.35	1.48	1.95	1.86	1.49	2.15	1.79	1.63	1.91	1.73	1.76	.30
25	2.16	1.41	4.15	1.31	0.76	0.75	1.43	1.68	1.70	1.76	2.22	-0.03	1.16	1.87	1.85	1.56	1.61	.98
												mean	1.96	1.67	1.63	1.79	1.76	
												SD	.64	.51	.42	.56	.18	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	2.05	1.98	2.11	1.97	-.27	-1.37	1.72	.81	.27	1.37	1.72	.81	13	69	81	41
2	2.03	2.23	1.97	2.13	-.76	1.23	.23	.16	.76	1.23	.23	.16	37	55	12	7
3	1.96	2.19	1.92	2.06	.44	-.15	.68	-.09	.44	.15	.68	.09	22	7	35	5
4	2.04	2.07	2.05	2.00	.31	1.14	-.06	-.47	.31	1.14	.06	.47	15	55	3	23
5	1.89	2.14	2.19	1.97	-.09	.06	.41	-.17	.09	.06	.41	.17	5	3	19	8
6	2.01	1.85	2.09	1.49	.62	-.13	.43	.22	.62	.13	.43	.22	31	7	20	15
7	1.82	1.77	1.94	1.93	.04	-.09	.47	.26	.04	.09	.47	.26	2	5	24	13
8	1.93	2.18	1.93	1.83	.24	.44	.42	-.03	.24	.44	.42	.03	13	20	22	2
9	2.15	1.94	1.94	2.04	-.65	.46	.15	.76	.65	.46	.15	.76	30	24	8	37
10	2.04	1.73	2.04	1.94	.36	.63	.71	-.20	.36	.63	.71	.20	17	37	35	10
11	1.98	1.88	1.87	2.03	.03	.36	.15	.73	.03	.36	.15	.73	1	19	8	36
12	2.01	1.90	1.86	2.18	-.19	.99	.12	-.43	.19	.99	.12	.43	10	52	7	20
13	1.94	2.10	2.15	1.95	.01	.80	.64	.76	.01	.80	.64	.76	1	38	30	39
14	2.15	1.87	2.08	2.23	-.63	.64	.74	-.35	.63	.64	.74	.35	29	34	36	16
15	1.69	2.05	1.77	1.99	.74	.61	.51	.44	.74	.61	.51	.44	44	30	29	22
16	1.95	2.11	1.76	2.23	-.22	.39	.84	.33	.22	.39	.84	.33	11	18	48	15
17	2.20	2.00	1.85	2.06	-.33	.21	.31	.41	.33	.21	.31	.41	15	11	17	20
18	1.98	1.72	2.07	2.04	.72	-.24	.35	-.08	.72	.24	.35	.08	36	14	17	4
19	1.98	1.95	2.01	1.97	-.24	.31	-.22	.57	.24	.31	.22	.57	12	16	11	29
20	2.24	2.15	1.98	1.95	-1.66	.48	-.50	1.28	1.66	.48	.50	1.28	74	22	25	66
21	2.06	2.08	1.98	2.03	.62	.14	.24	.49	.62	.14	.24	.49	30	7	12	24
22	2.06	2.08	1.92	2.38	.13	.79	.41	-.90	.13	.79	.41	.90	6	38	21	38
23	2.07	2.16	1.86	1.87	.89	.12	-.40	.34	.89	.12	.40	.34	43	6	21	18
24	1.99	2.02	1.94	2.18	.20	.39	.03	.45	.20	.39	.03	.45	10	19	2	21
25	1.96	2.01	1.88	1.99	.80	.14	.03	.43	.80	.14	.03	.43	41	7	2	22
mean	2.01	2.01	1.97	2.02	.04	.33	.34	.23	.45	.49	.43	.45	22	25	22	22
SD	.11	.14	.11	.16	.57	.52	.44	.48	.36	.37	.34	.29	17.11	18.13	16.81	14.31

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

A3-50-15

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.08	1.39	1.57	1.28	1.15	1.35	1.75	1.07	1.60	1.09	1.72	1.98	1.34	1.08	1.77	1.49	1.42	.29
2	1.38	1.23	1.46	1.29	1.24	1.70	1.08	1.33	1.61	1.30	1.62	1.54	1.41	1.34	1.36	1.49	1.40	.18
3	1.54	1.42	1.18	1.44	1.81	1.73	1.30	1.57	1.30	1.64	1.36	1.02	1.53	1.58	1.17	1.49	1.44	.22
4	1.29	1.15	1.33	1.48	1.56	1.65	1.32	1.67	1.18	1.29	1.53	1.84	1.43	1.42	1.50	1.42	1.44	.20
5	1.35	1.90	1.16	1.05	0.86	1.35	1.08	0.91	1.58	1.54	1.73	1.34	1.43	1.27	1.19	1.39	1.32	.31
6	1.51	1.63	1.72	1.41	1.66	1.80	1.68	1.72	1.21	1.94	1.75	1.55	1.61	1.72	1.65	1.54	1.63	.18
7	1.61	1.59	1.35	1.64	0.93	1.92	2.18	1.67	1.75	1.65	1.80	1.20	1.72	1.64	1.58	1.49	1.61	.31
8	1.25	1.10	0.69	1.01	2.01	1.65	1.62	1.09	1.05	1.80	1.35	0.50	1.25	1.38	0.94	1.47	1.26	.43
9	1.41	1.68	1.03	0.90	1.41	1.56	1.97	2.10	1.39	1.67	1.58	1.46	1.38	1.73	1.49	1.46	1.51	.32
10	1.35	1.05	1.50	1.44	1.62	1.74	1.19	1.37	1.38	0.86	1.22	1.37	1.41	1.19	1.35	1.41	1.34	.23
11	1.19	1.57	1.19	1.10	1.37	1.67	1.41	0.87	1.19	1.31	0.93	1.13	1.45	1.12	1.24	1.16	1.24	.23
12	1.68	1.34	1.04	1.07	1.46	1.30	1.12	1.46	0.98	1.19	1.61	1.75	1.24	1.44	1.30	1.35	1.33	.25
13	1.25	1.59	1.85	1.67	1.29	1.42	1.36	1.12	1.17	1.13	1.37	1.30	1.56	1.17	1.50	1.28	1.38	.22
14	1.58	1.46	1.76	1.29	1.13	1.05	1.53	1.13	1.37	1.46	1.37	1.90	1.27	1.39	1.73	1.29	1.42	.24
15	1.60	1.24	1.46	0.24	1.71	1.38	1.32	1.59	1.01	1.10	1.20	2.45	0.95	1.43	1.74	1.31	1.36	.49
16	1.21	1.17	1.06	0.80	1.45	1.31	0.96	1.06	1.18	1.55	1.57	1.73	1.09	1.27	1.25	1.40	1.25	.26
17	1.82	1.71	1.11	1.26	1.80	1.49	1.43	0.92	1.04	1.15	1.19	1.67	1.49	1.30	1.40	1.34	1.38	.30
18	1.07	1.65	1.08	0.83	1.60	1.87	1.63	0.73	1.49	1.39	1.05	1.36	1.45	1.06	1.36	1.38	1.31	.34
19	1.45	1.50	1.42	1.92	1.41	1.70	1.30	1.38	1.01	1.05	1.26	1.93	1.71	1.29	1.55	1.23	1.44	.28
20	1.40	1.42	1.98	2.07	1.34	1.85	1.31	1.56	1.50	1.17	1.42	1.24	1.78	1.38	1.51	1.42	1.52	.28
21	1.39	1.70	1.54	1.23	1.64	1.80	1.91	2.61	1.40	1.68	1.02	1.29	1.58	1.89	1.58	1.35	1.60	.39
22	1.25	1.29	1.45	1.24	0.53	1.00	1.32	1.48	1.38	1.40	1.20	1.50	1.18	1.38	1.42	1.04	1.25	.26
23	1.82	2.26	0.96	1.56	1.62	1.85	1.68	0.95	1.71	1.66	1.73	2.09	1.89	1.48	1.58	1.69	1.66	.37
24	1.71	1.10	1.27	1.32	1.49	1.91	1.58	0.53	1.09	1.45	0.91	1.44	1.44	1.23	1.43	1.16	1.32	.36
25	1.79	1.85	1.82	1.85	1.38	1.16	1.82	1.47	1.24	0.85	1.25	1.17	1.62	1.37	1.60	1.29	1.47	.33
												mean	1.45	1.38	1.45	1.37	1.41	
												SD	.21	.20	.19	.14	.12	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.54	1.39	1.61	1.49	.20	.31	-.16	.0	.20	.31	.16	.0	13	22	10	0
2	1.43	1.56	1.62	1.41	.02	.22	.26	-.08	.02	.22	.26	.08	2	14	16	6
3	1.43	1.65	1.29	1.44	-.10	.07	.12	-.05	.10	.07	.12	.05	7	4	10	3
4	1.43	1.45	1.41	1.52	.0	.03	-.09	.10	.0	.03	.09	.10	0	2	6	6
5	1.56	1.61	1.20	1.54	.13	.34	.01	.15	.13	.34	.01	.15	8	21	1	10
6	1.52	1.71	1.62	1.66	-.09	-.01	-.03	.12	.09	.01	.03	.12	6	1	2	7
7	1.72	1.40	1.70	1.62	.0	-.24	.12	.13	.0	.24	.12	.13	0	17	7	8
8	1.48	1.47	1.30	1.50	.23	.09	.36	.03	.23	.09	.36	.03	15	6	28	2
9	1.43	1.64	1.45	1.49	.05	-.09	-.04	.03	.05	.09	.04	.03	3	5	3	2
10	1.55	1.49	1.48	1.50	.14	.30	.13	.09	.14	.30	.13	.09	9	20	9	6
11	1.51	1.44	1.55	1.51	.06	.32	.31	.35	.06	.32	.31	.35	4	22	20	23
12	1.47	1.47	1.71	1.57	.23	.03	.41	.22	.23	.03	.41	.22	16	2	24	14
13	1.75	1.24	1.41	1.47	.19	.07	-.09	.19	.19	.07	.09	.19	11	6	7	13
14	1.64	1.41	1.61	1.43	.37	.02	-.12	.14	.37	.02	.12	.14	23	1	7	10
15	1.44	1.63	1.72	1.51	.49	.20	-.02	.20	.49	.20	.02	.20	34	12	1	13
16	1.28	1.67	1.51	1.49	.19	.40	.26	.09	.19	.40	.26	.09	15	24	17	6
17	1.43	1.57	1.53	1.62	-.06	.27	.13	.28	.06	.27	.13	.28	4	17	8	17
18	1.55	1.28	1.57	1.44	.10	.22	.21	.06	.10	.22	.21	.06	6	17	14	4
19	1.60	1.40	1.47	1.60	-.11	.11	-.08	.37	.11	.11	.08	.37	7	8	5	23
20	1.62	1.23	1.51	1.35	-.16	-.15	.0	-.07	.16	.15	.0	.07	10	12	0	5
21	1.41	1.68	1.57	1.55	-.17	-.21	-.01	.20	.17	.21	.01	.20	12	13	1	13
22	1.42	1.41	1.40	1.46	.24	.03	-.02	.42	.24	.03	.02	.42	17	2	2	29
23	1.73	1.48	1.61	1.51	-.16	.0	.03	-.18	.16	.0	.03	.18	9	0	2	12
24	1.39	1.33	1.74	1.59	-.05	.10	.31	.43	.05	.10	.31	.43	4	8	18	27
25	1.51	1.56	1.43	1.49	-.11	.19	-.17	.20	.11	.19	.17	.20	7	12	12	13
mean	1.51	1.49	1.52	1.51	.07	.10	.07	.14	.15	.16	.14	.17	10	11	9	11
SD	.11	.14	.14	.07	.17	.17	.17	.15	.11	.12	.12	.12	7.34	7.57	7.56	7.69

A6-50-15

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	1.84	1.73	1.45	1.50	1.11	1.46	0.93	1.11	1.43	1.76	1.13	1.09	1.56	1.57	1.16	1.22	1.38	.29
2	0.61	0.93	1.98	1.07	1.65	1.45	1.45	1.36	0.76	0.72	1.46	1.49	1.15	0.90	1.64	1.29	1.24	.40
3	1.25	1.45	1.90	1.95	1.53	1.37	1.34	1.74	1.73	1.36	1.33	0.65	1.59	1.45	1.30	1.53	1.47	.33
4	0.48	0.90	1.42	1.41	1.85	1.19	1.43	1.20	1.30	0.78	1.32	1.25	1.17	0.82	1.37	1.49	1.21	.34
5	1.48	2.58	1.47	1.74	1.48	1.14	1.04	1.46	1.36	1.49	1.60	1.59	1.82	1.48	1.37	1.48	1.54	.36
6	1.80	0.79	1.89	1.43	1.83	1.58	0.84	1.14	1.27	1.45	1.51	1.93	1.27	1.46	1.55	1.54	1.46	.37
7	1.20	1.26	1.00	1.21	1.13	0.98	1.50	0.72	1.90	1.45	1.66	1.77	1.15	1.12	1.42	1.56	1.32	.34
8	1.52	1.17	1.33	1.35	1.23	1.07	1.53	1.26	1.48	1.68	1.41	0.97	1.20	1.49	1.28	1.37	1.33	.20
9	1.87	1.07	1.75	1.81	1.87	1.57	1.64	1.91	1.44	1.03	1.25	1.49	1.48	1.60	1.63	1.52	1.56	.30
10	0.86	1.01	1.28	1.77	1.31	1.87	1.29	0.74	1.61	1.56	1.54	1.11	1.55	1.05	1.23	1.49	1.33	.34
11	1.53	1.80	1.52	1.81	1.55	1.92	1.84	1.65	2.27	1.25	1.69	1.43	1.84	1.48	1.60	1.84	1.69	.25
12	1.67	1.71	1.47	0.83	1.18	0.95	1.04	1.49	0.96	1.68	1.50	1.93	1.16	1.61	1.48	1.21	1.37	.35
13	1.09	1.32	1.01	1.13	1.35	1.35	1.05	1.33	1.52	1.42	1.28	1.44	1.27	1.28	1.17	1.38	1.27	.16
14	1.67	1.23	1.73	1.48	1.83	1.67	2.00	2.13	1.52	1.47	1.38	1.39	1.46	1.76	1.71	1.58	1.63	.25
15	1.24	1.30	1.65	1.62	1.95	1.39	1.40	1.71	0.95	1.28	1.70	1.93	1.44	1.41	1.66	1.53	1.51	.29
16	1.18	0.88	1.73	1.47	1.65	1.51	1.44	1.25	1.59	1.16	1.93	1.61	1.29	1.20	1.59	1.72	1.45	.28
17	1.81	1.39	2.09	1.67	1.66	1.44	0.84	1.36	0.21	1.13	1.49	1.16	1.50	1.43	1.36	1.12	1.35	.47
18	0.99	1.30	1.55	1.52	1.48	1.44	1.13	0.96	1.21	1.93	2.25	1.96	1.42	1.29	1.55	1.65	1.48	.38
19	1.39	1.68	1.45	1.16	1.47	1.86	1.25	1.54	1.00	1.39	1.84	1.84	1.57	1.44	1.51	1.44	1.49	.27
20	1.39	1.48	1.84	1.12	1.00	1.42	1.74	1.48	1.00	1.16	1.19	1.17	1.34	1.34	1.58	1.06	1.33	.26
21	1.50	1.59	1.62	1.44	1.57	1.41	1.81	1.69	1.08	1.34	1.72	1.45	1.48	1.51	1.63	1.46	1.52	.19
22	1.78	1.72	1.50	1.39	1.09	1.26	1.88	1.79	1.12	1.49	1.34	1.12	1.46	1.69	1.50	1.18	1.46	.27
23	1.15	1.41	1.78	1.60	1.22	1.29	1.32	1.18	1.62	1.46	1.82	1.21	1.43	1.26	1.44	1.55	1.42	.22
24	1.65	1.58	1.45	1.37	1.33	1.52	1.56	1.26	1.63	1.40	0.69	1.20	1.49	1.44	1.40	1.22	1.39	.25
25	1.11	1.28	0.97	1.04	1.74	1.50	1.15	1.02	1.39	1.60	1.27	1.86	1.27	1.24	1.33	1.47	1.33	.28
												mean	1.41	1.37	1.46	1.44	1.42	
												SD	.19	.22	.16	.18	.11	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.50	1.49	1.35	1.50	-.06	-.08	.19	.28	.06	.08	.19	.28	4	5	14	18
2	1.37	1.38	1.48	1.46	.22	.48	-.16	.17	.22	.48	.16	.17	16	35	11	12
3	1.59	1.50	1.50	1.63	.0	.05	.20	.10	.0	.05	.20	.10	0	3	14	6
4	1.42	1.49	1.41	1.62	.25	.67	.04	.13	.25	.67	.04	.13	18	45	3	8
5	1.54	1.54	1.37	1.48	-.28	.06	.0	.0	.28	.06	.0	.0	18	4	0	0
6	1.43	1.46	1.66	1.48	.16	-.0	.11	-.06	.16	.0	.11	.06	11	0	6	4
7	1.58	1.35	1.68	1.43	.43	.23	.26	-.13	.43	.23	.26	.13	27	17	15	9
8	1.54	1.57	1.46	1.41	.34	.08	.18	.04	.34	.08	.18	.04	22	5	13	3
9	1.52	1.66	1.50	1.67	.04	.06	-.13	.15	.04	.06	.13	.15	2	3	8	9
10	1.78	1.57	1.34	1.44	.23	.52	.11	-.05	.23	.52	.11	.05	13	33	8	3
11	1.60	1.54	1.56	1.66	-.24	.06	-.04	-.18	.24	.06	.04	.18	15	4	2	11
12	1.38	1.63	1.53	1.41	.22	.02	.05	.20	.22	.02	.05	.20	16	1	3	14
13	1.41	1.41	1.49	1.41	.14	.13	.32	.03	.14	.13	.32	.03	10	9	22	2
14	1.61	1.54	1.53	1.54	.15	-.22	-.18	-.04	.15	.22	.18	.04	9	14	12	2
15	1.55	1.45	1.49	1.57	.11	.04	-.17	.04	.11	.04	.17	.04	7	3	11	2
16	1.44	1.37	1.58	1.47	.15	.17	-.01	-.25	.15	.17	.01	.25	11	13	1	17
17	1.44	1.49	1.38	1.45	-.06	.06	.02	.33	.06	.06	.02	.33	4	4	1	23
18	1.60	1.49	1.45	1.51	.18	.20	-.10	-.14	.18	.20	.10	.14	11	13	7	9
19	1.57	1.56	1.42	1.49	.0	.12	-.09	.05	.0	.12	.09	.05	0	8	7	4
20	1.55	1.47	1.54	1.58	.21	.13	-.04	.52	.21	.13	.04	.52	14	9	3	33
21	1.43	1.48	1.59	1.43	-.05	-.03	-.04	-.03	.05	.03	.04	.03	3	2	2	2
22	1.57	1.60	1.49	1.38	.11	-.09	-.01	.20	.11	.09	.01	.20	7	5	1	14
23	1.41	1.54	1.50	1.51	-.02	.28	.06	-.04	.02	.28	.06	.04	2	18	4	3
24	1.53	1.34	1.44	1.46	.04	-.10	.04	.24	.04	.10	.04	.24	3	7	3	17
25	1.43	1.51	1.58	1.63	.16	.27	.25	.16	.16	.27	.25	.16	11	18	16	10
mean	1.51	1.50	1.49	1.50	.10	.12	.04	.07	.16	.17	.11	.14	10	11	7	9
SD	.09	.08	.09	.08	.16	.20	.14	.17	.11	.16	.09	.12	6.93	11.15	5.74	7.68

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

N3-50-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	3.16	2.94	2.82	2.92	2.53	2.29	2.30	2.52	2.38	2.35	2.34	2.49	2.72	2.68	2.54	2.42	2.59	.28
2	3.37	3.40	2.49	2.39	2.75	2.64	2.63	2.78	2.60	2.87	2.22	2.37	2.81	3.01	2.50	2.52	2.71	.35
3	3.14	3.18	2.46	2.63	2.31	2.43	2.73	2.76	3.23	2.94	2.16	2.78	2.75	2.95	2.66	2.57	2.73	.33
4	3.45	3.07	2.38	2.65	2.85	2.69	3.35	2.78	1.93	1.64	2.28	2.51	2.80	2.62	2.75	2.35	2.63	.51
5	3.55	3.29	3.18	2.45	2.96	2.87	2.99	2.41	2.65	2.15	2.56	2.51	2.87	2.70	2.89	2.72	2.80	.40
6	3.17	3.54	3.04	3.07	3.03	2.38	2.66	2.74	2.67	2.85	2.73	2.00	3.00	2.92	2.57	2.81	2.82	.38
7	3.19	3.21	3.04	3.42	2.28	2.74	2.55	3.01	2.23	2.87	2.73	2.29	3.12	3.02	2.63	2.41	2.80	.38
8	3.17	3.11	2.82	2.98	2.36	2.37	2.60	2.38	2.16	2.34	2.23	2.25	2.82	2.63	2.56	2.25	2.56	.35
9	2.91	2.98	2.79	2.57	1.87	2.13	2.69	2.74	1.94	2.39	2.57	2.23	2.56	2.68	2.57	2.13	2.48	.36
10	3.32	3.42	3.78	2.97	1.76	2.70	2.44	2.93	1.95	1.97	1.92	2.32	3.03	2.74	2.85	1.88	2.62	.64
11	2.83	2.52	2.44	2.13	2.74	2.08	2.00	1.76	2.29	2.54	1.78	2.00	2.24	2.38	2.15	2.27	2.26	.34
12	2.98	3.63	2.66	2.78	2.55	2.83	2.18	2.21	2.58	2.55	2.33	2.21	3.08	2.58	2.35	2.49	2.62	.39
13	3.37	3.04	2.61	2.77	2.55	2.24	2.53	2.52	2.65	1.63	2.66	2.52	2.68	2.51	2.55	2.62	2.59	.40
14	2.81	2.93	2.84	2.88	2.19	1.89	2.08	2.11	2.33	2.26	2.31	2.34	2.57	2.39	2.42	2.28	2.41	.34
15	2.96	3.10	2.97	2.74	2.58	2.90	2.77	2.87	2.03	2.89	2.04	1.97	2.91	2.91	2.57	2.22	2.65	.39
16	2.88	2.64	2.53	3.04	2.29	2.25	2.16	2.58	2.44	2.06	2.64	1.83	2.64	2.51	2.17	2.46	2.45	.33
17	3.02	2.84	2.90	2.74	2.29	2.02	2.56	2.95	2.44	2.49	2.58	2.02	2.53	2.82	2.49	2.44	2.57	.32
18	3.03	2.89	3.06	2.76	3.10	3.24	2.33	1.94	2.60	2.40	2.41	2.84	2.96	2.46	2.74	2.70	2.72	.37
19	3.46	3.20	2.71	2.87	2.76	2.44	2.61	2.57	1.90	2.31	2.18	2.11	2.84	2.78	2.48	2.28	2.59	.43
20	2.97	2.47	3.04	2.77	2.14	2.29	3.14	3.24	2.27	2.34	2.27	2.27	2.51	2.85	2.82	2.23	2.60	.39
21	3.83	3.69	2.76	2.83	2.77	2.90	2.91	3.09	2.75	2.65	2.57	2.32	3.14	3.19	2.66	2.70	2.92	.42
22	3.20	3.79	2.89	3.15	2.41	2.35	2.75	2.55	1.91	1.67	2.06	2.21	3.10	2.47	2.62	2.13	2.58	.58
23	3.04	3.47	2.95	2.91	2.82	3.25	2.63	2.38	2.07	2.65	2.31	2.94	3.21	2.69	2.84	2.40	2.79	.38
24	3.50	3.08	2.47	2.39	2.40	1.96	2.51	3.10	2.14	1.99	2.31	1.67	2.48	2.86	2.22	2.28	2.46	.51
25	3.02	3.24	2.70	2.87	2.90	2.99	2.23	2.42	3.05	2.84	2.44	2.46	3.03	2.76	2.46	2.80	2.76	.30
												mean	2.82	2.72	2.56	2.41	2.63	
												SD	.24	.21	.20	.23	.15	

	True sep: (tax mean - comp mean)				algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.83	2.05	1.87	2.06	-.89	-.63	-.67	-.36	.89	.63	.67	.36	48	31	36	17
2	2.00	1.97	2.00	2.04	-.81	-1.04	-.50	-.48	.81	1.04	.50	.48	41	53	25	24
3	1.90	2.19	1.99	1.88	-.85	-.76	-.67	-.69	.85	.76	.67	.69	45	35	34	37
4	1.85	2.09	2.16	1.99	-.95	-.53	-.59	-.36	.95	.53	.59	.36	52	26	27	18
5	2.01	1.94	2.18	2.14	-.86	-.76	-.71	-.58	.86	.76	.71	.58	43	39	33	27
6	1.96	1.84	1.85	2.09	-1.04	-1.08	-.72	-.72	1.04	1.08	.72	.72	53	59	39	34
7	2.06	1.87	2.05	1.94	-1.06	-1.15	-.58	-.47	1.06	1.15	.58	.47	52	62	28	24
8	2.05	2.11	1.95	1.97	-.77	-.52	-.61	-.28	.77	.52	.61	.28	38	25	31	14
9	1.93	2.00	2.00	2.04	-.63	-.68	-.57	-.09	.63	.68	.57	.09	33	34	28	4
10	1.88	1.95	2.05	1.86	-1.15	-.79	-.80	-.02	1.15	.79	.80	.02	61	41	39	1
11	1.96	1.94	1.95	1.89	-.28	-.44	-.20	-.38	.28	.44	.20	.38	14	23	10	20
12	2.15	1.86	2.03	2.04	-.93	-.72	-.32	-.45	.93	.72	.32	.45	43	39	16	22
13	1.95	1.89	1.99	2.13	-.73	-.62	-.56	-.49	.73	.62	.56	.49	38	33	28	23
14	2.07	1.96	1.87	2.09	-.50	-.43	-.55	-.19	.50	.43	.55	.19	24	22	29	9
15	2.04	1.98	2.01	1.94	-.87	-.93	-.56	-.28	.87	.93	.56	.28	43	47	28	14
16	1.92	1.95	1.84	2.00	-.72	-.56	-.33	-.46	.72	.56	.33	.46	38	29	18	23
17	1.89	1.97	1.81	2.03	-.64	-.85	-.68	-.41	.64	.85	.68	.41	34	43	38	20
18	1.83	1.80	2.00	2.01	-1.13	-.66	-.74	-.69	1.13	.66	.74	.69	62	36	37	34
19	1.99	2.12	1.85	2.03	-.85	-.66	-.63	-.25	.85	.66	.63	.25	43	31	34	12
20	1.85	2.00	2.15	2.01	-.66	-.85	-.67	-.22	.66	.85	.67	.22	36	43	31	11
21	2.06	2.19	2.08	1.98	-1.08	-1.0	-.58	-.72	1.08	1.0	.58	.72	52	46	28	36
22	2.09	2.01	1.86	2.06	-1.01	-.46	-.76	-.07	1.01	.46	.76	.07	48	23	41	3
23	2.10	1.97	2.08	1.91	-1.11	-.72	-.76	-.49	1.11	.72	.76	.49	53	37	37	26
24	1.71	2.17	1.95	2.10	-.77	-.69	-.27	-.18	.77	.69	.27	.18	45	32	14	9
25	2.29	2.05	2.02	2.02	-.74	-.71	-.44	-.78	.74	.71	.44	.78	32	35	22	38
mean	1.97	1.99	1.98	2.01	-.84	-.73	-.58	-.40	.84	.73	.58	.40	43	37	29	20
SD	.12	.10	.10	.07	.20	.19	.16	.21	.20	.19	.16	.21	10.59	10.40	8.00	10.58

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

N6-50-20

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	3.53	3.05	3.11	2.97	2.61	2.52	2.73	2.57	2.14	2.34	2.08	2.19	2.85	2.81	2.68	2.28	2.65	.43
2	3.23	3.21	2.46	3.04	2.73	2.51	2.91	2.83	2.19	2.58	2.56	2.40	2.92	2.88	2.59	2.49	2.72	.32
3	3.45	2.87	2.51	3.16	2.23	2.30	2.62	2.80	1.96	1.65	1.50	1.93	2.78	2.63	2.35	1.90	2.42	.57
4	3.79	3.36	2.65	3.08	2.44	2.43	2.91	2.53	1.96	2.44	2.49	2.72	2.96	2.92	2.76	2.30	2.73	.47
5	3.12	3.57	3.31	3.10	2.51	2.50	2.87	2.90	1.93	2.38	2.01	2.04	3.06	2.80	2.74	2.15	2.69	.52
6	3.80	3.51	2.69	3.04	3.29	3.26	3.16	3.12	2.71	3.00	1.97	2.29	3.27	3.31	2.71	2.66	2.99	.49
7	3.22	3.98	2.56	2.80	2.54	3.00	2.66	2.84	3.13	3.23	2.06	2.42	3.26	3.10	2.55	2.58	2.87	.47
8	3.73	3.54	3.18	3.52	2.30	3.17	2.99	2.50	2.83	2.61	2.14	2.70	3.41	2.95	2.96	2.42	2.93	.49
9	2.77	2.65	3.09	3.23	2.54	2.59	2.57	2.81	2.14	2.99	2.20	2.35	2.82	2.86	2.67	2.29	2.66	.32
10	3.21	3.18	3.04	3.14	2.36	2.86	2.45	2.87	2.09	1.97	2.93	2.68	3.06	2.68	2.72	2.46	2.73	.41
11	3.41	3.59	3.27	3.37	2.34	2.46	2.63	2.32	2.57	2.09	1.91	2.54	3.14	2.61	2.81	2.27	2.71	.54
12	3.49	3.77	2.76	2.53	2.66	2.60	2.64	2.25	2.23	2.20	2.30	2.10	2.97	2.65	2.50	2.40	2.63	.50
13	3.61	3.23	2.62	3.09	2.49	2.94	2.97	3.26	2.62	2.61	2.74	2.23	3.09	3.16	2.61	2.62	2.87	.37
14	3.32	3.40	3.00	2.82	2.23	2.50	2.95	3.09	2.87	2.22	2.54	2.28	2.91	2.88	2.74	2.55	2.77	.39
15	3.30	2.82	3.17	3.50	2.28	2.78	2.89	2.91	2.31	2.13	2.20	2.11	3.03	2.78	2.72	2.26	2.70	.46
16	3.51	3.13	3.50	3.19	2.67	2.70	2.92	2.88	2.34	1.86	2.32	2.93	3.01	2.75	3.12	2.44	2.83	.47
17	3.42	3.11	3.50	3.51	2.23	2.53	2.95	3.22	2.42	2.62	2.34	2.59	3.05	3.09	3.01	2.33	2.87	.45
18	3.34	3.08	3.03	2.92	2.19	2.04	2.67	2.74	2.30	2.31	2.36	2.33	2.68	2.80	2.68	2.28	2.61	.40
19	3.47	3.51	2.42	2.91	2.37	3.07	2.64	2.90	2.47	2.37	2.25	2.68	3.16	2.91	2.58	2.36	2.76	.41
20	3.14	4.04	3.27	3.44	2.45	2.40	2.76	2.91	3.09	2.64	3.28	2.92	3.29	2.90	2.98	2.94	3.03	.44
21	3.24	3.48	3.07	3.29	1.86	1.60	2.86	2.64	2.13	1.89	2.10	1.84	2.79	2.59	2.59	2.03	2.50	.64
22	2.91	3.50	3.00	3.12	2.42	2.87	2.78	2.42	2.30	2.56	1.61	2.46	3.16	2.63	2.75	2.11	2.66	.46
23	3.36	2.91	3.20	2.79	2.61	2.63	3.14	2.99	2.03	1.98	2.15	2.25	2.78	2.78	2.86	2.26	2.67	.46
24	3.68	3.44	2.69	2.67	2.31	2.49	2.56	2.79	2.34	2.21	2.63	1.84	2.87	2.89	2.36	2.43	2.64	.48
25	3.06	3.22	2.94	2.66	2.62	2.72	2.26	2.43	2.43	3.04	2.21	2.47	2.87	2.84	2.56	2.42	2.67	.32
												mean	3.01	2.85	2.70	2.37	2.73	
												SD	.18	.17	.18	.21	.14	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	2.07	1.93	2.05	1.94	-.78	-.88	-.63	-.34	.78	.88	.63	.34	38	46	31	17
2	2.16	2.03	2.08	2.03	-.76	-.85	-.51	-.46	.76	.85	.51	.46	35	42	25	23
3	2.07	2.06	2.06	2.03	-.71	-.57	-.29	.13	.71	.57	.29	.13	34	28	14	7
4	2.06	2.06	2.08	1.97	-.90	-.86	-.68	-.33	.90	.86	.68	.33	44	42	33	17
5	2.03	1.96	1.91	1.98	-1.03	-.84	-.83	-.17	1.03	.84	.83	.17	51	43	43	9
6	1.93	2.09	2.05	2.10	-1.34	-1.22	-.66	-.56	1.34	1.22	.66	.56	69	58	32	27
7	2.17	2.07	2.02	2.07	-1.09	-1.03	-.53	-.51	1.09	1.03	.53	.51	50	50	26	24
8	2.02	1.95	2.02	1.88	-1.39	-1.0	-.94	-.54	1.39	1.0	.94	.54	69	51	46	29
9	1.86	1.92	1.90	1.83	-.96	-.94	-.77	-.46	.96	.94	.77	.46	52	49	41	25
10	1.99	1.94	2.03	2.04	-1.07	-.74	-.69	-.42	1.07	.74	.69	.42	54	38	34	21
11	2.08	1.99	2.05	2.04	-1.06	-.62	-.76	-.23	1.06	.62	.76	.23	51	31	37	11
12	2.04	2.10	1.91	2.05	-.93	-.55	-.59	-.35	.93	.55	.59	.35	45	26	31	17
13	1.93	2.08	2.05	2.06	-1.16	-1.08	-.56	-.56	1.16	1.08	.56	.56	60	52	27	27
14	1.93	2.04	2.07	2.03	-.98	-.84	-.67	-.52	.98	.84	.67	.52	51	41	33	25
15	1.99	2.05	1.98	2.04	-1.04	-.73	-.74	-.22	1.04	.73	.74	.22	52	36	38	11
16	2.01	2.00	2.16	2.09	-1.0	-.75	-.96	-.35	1.0	.75	.96	.35	50	38	44	17
17	2.12	2.17	2.04	2.02	-.93	-.92	-.97	-.31	.93	.92	.97	.31	44	42	48	15
18	1.96	1.93	1.97	2.09	-.72	-.87	-.71	-.19	.72	.87	.71	.19	37	45	36	9
19	1.95	1.98	1.87	1.98	-1.21	-.93	-.71	-.38	1.21	.93	.71	.38	62	47	38	19
20	2.09	2.00	2.14	2.01	-1.20	-.90	-.84	-.93	1.20	.90	.84	.93	58	45	39	46
21	1.87	2.01	1.92	1.85	-.92	-.58	-.67	-.18	.92	.58	.67	.18	49	29	35	10
22	2.22	2.18	2.12	1.87	-.94	-.45	-.63	-.24	.94	.45	.63	.24	42	21	30	13
23	1.99	2.13	2.11	1.97	-.79	-.65	-.75	-.29	.79	.65	.75	.29	40	30	36	15
24	2.05	2.17	1.93	2.14	-.82	-.72	-.43	-.29	.82	.72	.43	.29	40	33	22	13
25	1.99	1.93	1.93	2.13	-.88	-.91	-.63	-.29	.88	.91	.63	.29	44	47	32	14
mean	2.02	2.03	2.02	2.01	-.98	-.82	-.69	-.36	.98	.82	.69	.37	49	40	34	18
SD	.09	.08	.08	.08	.18	.18	.15	.19	.18	.18	.15	.17	9.45	9.07	7.56	8.47

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

D3-50-v1

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	2.83	2.97	2.36	2.47	1.66	2.27	2.26	2.24	1.25	1.66	1.43	1.68	2.57	2.24	2.10	1.45	2.09	.52
2	2.93	3.73	2.59	3.25	1.28	2.12	2.16	2.58	1.82	2.29	1.48	0.99	3.03	2.60	1.91	1.53	2.27	.77
3	2.95	3.56	2.90	3.38	1.50	2.05	2.55	2.71	2.04	1.68	1.16	1.44	3.00	2.45	2.30	1.57	2.33	.76
4	3.08	2.99	2.38	2.94	1.31	1.86	2.06	2.00	1.51	1.95	1.75	1.91	2.60	2.34	2.12	1.52	2.15	.56
5	3.38	3.51	3.29	3.38	1.58	2.15	2.59	2.89	1.48	2.37	1.46	1.84	3.01	2.88	2.57	1.51	2.49	.76
6	3.14	3.72	2.22	3.23	1.34	2.12	2.84	2.72	1.52	1.83	1.89	2.18	3.02	2.56	2.41	1.58	2.40	.70
7	2.69	2.85	2.47	3.08	1.66	2.60	1.98	2.75	1.87	1.80	1.57	1.47	2.84	2.41	1.97	1.70	2.23	.54
8	2.92	3.37	2.52	2.86	1.91	2.17	2.34	2.58	1.63	1.73	1.30	1.28	2.80	2.41	2.05	1.61	2.22	.64
9	2.96	2.92	2.59	3.17	1.80	1.97	1.79	2.46	1.35	1.95	1.52	2.02	2.69	2.46	2.13	1.56	2.21	.57
10	2.31	2.62	1.96	2.70	1.70	2.28	1.84	2.23	0.79	1.48	0.80	1.42	2.53	2.01	1.74	1.10	1.84	.61
11	2.67	3.02	2.10	2.92	2.16	2.46	2.07	2.22	1.49	1.81	1.91	1.56	2.80	2.23	1.91	1.85	2.20	.47
12	2.69	3.05	1.98	2.44	1.53	1.78	2.91	2.52	1.28	1.38	1.15	1.12	2.42	2.20	2.00	1.32	1.99	.68
13	2.91	3.00	2.46	3.08	2.06	1.91	2.35	2.62	1.78	1.98	1.80	1.27	2.66	2.50	2.03	1.88	2.27	.54
14	2.78	2.92	2.54	3.15	1.55	2.18	1.91	2.11	1.97	1.46	1.31	2.17	2.75	2.12	2.21	1.61	2.17	.56
15	3.00	3.40	1.57	2.51	1.80	2.80	2.19	2.72	1.78	2.64	1.36	1.66	2.90	2.79	1.81	1.65	2.29	.62
16	3.21	3.43	2.30	2.56	1.91	2.57	2.16	1.79	1.86	1.81	1.70	1.42	2.85	2.27	1.96	1.82	2.23	.59
17	2.59	2.77	2.98	3.16	1.95	2.51	2.38	2.39	1.97	2.10	1.61	1.50	2.81	2.36	2.29	1.84	2.33	.50
18	2.80	2.91	2.14	3.24	1.40	2.34	2.18	2.36	1.73	2.18	1.68	1.74	2.83	2.45	2.02	1.60	2.23	.53
19	2.40	3.04	1.70	2.44	1.82	2.22	1.71	2.40	2.02	2.15	1.65	1.51	2.57	2.32	1.64	1.83	2.09	.42
20	2.82	3.15	3.25	3.52	1.75	2.40	2.30	2.69	1.67	1.90	1.51	1.84	3.02	2.47	2.46	1.64	2.40	.65
21	2.16	2.80	2.45	3.24	1.43	2.37	1.68	1.53	1.63	2.06	1.68	2.24	2.80	1.92	2.12	1.58	2.11	.53
22	2.72	2.90	1.74	2.27	1.83	2.35	1.33	2.08	1.49	2.15	1.19	1.20	2.51	2.32	1.42	1.50	1.94	.55
23	2.40	2.32	1.92	2.35	2.21	1.88	1.85	2.37	0.88	0.75	1.29	0.96	2.18	1.84	1.58	1.46	1.77	.60
24	2.90	3.08	2.21	2.60	2.17	2.32	2.00	2.05	1.37	1.40	1.20	1.26	2.67	2.12	1.82	1.58	2.05	.61
25	2.69	3.04	2.16	2.57	1.74	2.83	2.00	2.25	1.66	2.08	1.77	1.59	2.81	2.34	1.92	1.72	2.20	.47
												mean	2.75	2.34	2.02	1.60	2.18	
												SD	.21	.24	.27	.17	.17	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	1.97	1.78	1.61	1.26	-.60	-.46	-.49	-.19	.60	.46	.49	.19	30	26	30	15
2	2.08	1.84	1.50	1.40	-.95	-.76	-.41	-.13	.95	.76	.41	.13	46	41	28	9
3	2.29	1.98	1.55	1.40	-.71	-.47	-.75	-.17	.71	.47	.75	.17	31	24	48	12
4	1.98	1.57	1.46	1.28	-.62	-.77	-.66	-.24	.62	.77	.66	.24	31	49	45	19
5	1.91	1.85	1.62	1.24	-1.10	-1.03	-.95	-.27	1.10	1.03	.95	.27	58	56	59	22
6	2.18	1.78	1.71	1.21	-.84	-.78	-.70	-.37	.84	.78	.70	.37	39	44	41	31
7	1.99	1.74	1.36	1.39	-.85	-.67	-.61	-.31	.85	.67	.61	.31	43	39	45	22
8	1.96	1.70	1.52	1.16	-.84	-.71	-.53	-.45	.84	.71	.53	.45	43	42	35	39
9	2.10	1.75	1.51	1.20	-.59	-.71	-.62	-.36	.59	.71	.62	.36	28	40	41	30
10	2.02	1.64	1.47	1.13	-.51	-.37	-.27	.03	.51	.37	.27	.03	25	22	18	3
11	1.95	1.72	1.38	1.20	-.85	-.51	-.53	-.65	.85	.51	.53	.65	44	30	38	54
12	1.86	1.58	1.29	1.02	-.56	-.62	-.71	-.30	.56	.62	.71	.30	30	39	55	29
13	2.06	1.79	1.58	1.32	-.60	-.71	-.45	-.56	.60	.71	.45	.56	29	40	28	42
14	2.18	1.66	1.74	1.18	-.57	-.46	-.47	-.43	.57	.46	.47	.43	26	28	27	36
15	2.19	1.92	1.53	1.33	-.71	-.87	-.28	-.32	.71	.87	.28	.32	33	45	18	24
16	2.14	1.60	1.50	1.37	-.71	-.67	-.46	-.45	.71	.67	.46	.45	33	42	31	33
17	1.89	1.81	1.50	1.37	-.92	-.55	-.79	-.47	.92	.55	.79	.47	49	30	52	35
18	2.19	1.78	1.39	1.23	-.64	-.67	-.63	-.37	.64	.67	.63	.37	29	37	45	30
19	2.11	1.77	1.40	1.22	-.46	-.55	-.24	-.61	.46	.55	.24	.61	22	31	17	50
20	2.13	1.68	1.52	1.25	-.89	-.79	-.94	-.39	.89	.79	.94	.39	42	47	62	31
21	2.03	1.51	1.47	1.21	-.77	-.41	-.65	-.37	.77	.41	.65	.37	38	27	44	31
22	2.04	1.70	1.32	1.37	-.47	-.62	-.10	-.13	.47	.62	.10	.13	23	36	8	10
23	1.88	1.66	1.42	1.21	-.30	-.18	-.16	-.25	.30	.18	.16	.25	16	11	11	21
24	1.95	1.73	1.46	1.33	-.72	-.39	-.36	-.25	.72	.39	.36	.25	37	22	25	19
25	2.03	1.63	1.35	1.13	-.78	-.71	-.57	-.59	.78	.71	.57	.59	39	44	42	53
mean	2.04	1.73	1.49	1.26	-.70	-.62	-.53	-.34	.70	.62	.53	.35	35	36	36	28
SD	.11	.11	.11	.10	.18	.18	.22	.16	.18	.18	.22	.16	9.29	10.09	14.44	13.20

MAMBAC: Estimation of Separation, using FIRST and LAST abscissa intervals

D6-50-v1

sample	output/input												Pooled for each variable				All variables	
	y/x	x/y	z/x	x/z	v/x	x/v	z/y	y/z	v/y	y/v	v/z	z/v	x	y	z	v	mean	SD
1	2.80	3.04	2.38	2.43	1.16	2.00	2.64	2.43	1.27	2.01	1.08	1.65	2.49	2.41	2.22	1.17	2.07	.63
2	2.68	2.70	2.70	3.36	1.63	2.38	1.65	2.40	1.89	2.14	1.85	1.85	2.81	2.41	2.07	1.79	2.27	.51
3	3.31	3.01	2.67	3.26	1.72	2.29	2.11	2.75	1.79	2.05	1.23	1.48	2.85	2.70	2.09	1.58	2.31	.66
4	2.50	3.06	2.99	3.38	1.99	2.45	2.56	2.91	1.91	2.55	1.60	1.90	2.96	2.65	2.48	1.83	2.48	.52
5	3.35	3.48	2.68	3.53	2.09	2.61	2.51	2.43	1.81	1.93	1.09	1.32	3.21	2.57	2.17	1.66	2.40	.77
6	2.61	3.17	2.59	3.54	1.99	2.37	2.21	2.90	1.20	2.02	1.64	1.27	3.03	2.51	2.02	1.61	2.29	.69
7	3.37	3.51	2.59	2.84	1.32	1.98	2.36	2.74	1.11	1.76	1.20	1.62	2.78	2.62	2.19	1.21	2.20	.79
8	3.15	3.43	2.55	2.66	1.68	2.28	2.06	2.65	0.72	1.52	0.95	1.71	2.79	2.44	2.11	1.12	2.11	.80
9	3.54	3.73	2.21	2.88	1.55	2.68	2.41	2.58	1.72	1.95	1.55	1.70	3.10	2.69	2.11	1.61	2.38	.71
10	3.18	3.51	3.04	3.35	1.12	2.20	2.68	2.50	1.56	1.78	1.95	1.74	3.02	2.49	2.49	1.54	2.38	.74
11	3.14	3.42	2.82	3.25	2.36	2.54	2.16	2.15	1.66	2.13	1.63	1.23	3.07	2.47	2.07	1.88	2.37	.66
12	2.77	3.66	3.05	3.98	1.68	3.02	2.81	3.17	1.28	2.18	1.64	2.49	3.55	2.71	2.78	1.53	2.64	.79
13	3.03	4.15	2.47	2.75	2.10	2.44	2.37	2.25	1.81	1.76	1.53	1.90	3.11	2.35	2.25	1.81	2.38	.67
14	2.76	3.21	2.58	3.07	1.76	2.70	1.91	2.67	1.42	1.74	1.25	1.74	2.99	2.39	2.08	1.48	2.23	.64
15	3.52	3.46	2.46	2.90	1.67	2.36	2.07	2.57	1.46	1.67	1.24	1.20	2.91	2.59	1.91	1.46	2.22	.77
16	3.45	3.24	2.99	3.01	1.53	2.28	2.52	2.38	1.43	1.53	1.86	1.99	2.84	2.45	2.50	1.61	2.35	.67
17	3.68	3.90	2.77	3.38	1.26	1.97	2.38	2.35	1.97	2.13	0.90	1.44	3.08	2.72	2.20	1.38	2.34	.91
18	2.74	3.34	2.31	3.13	2.16	2.15	2.00	2.44	1.31	1.96	1.87	1.37	2.87	2.38	1.89	1.78	2.23	.59
19	3.42	3.68	2.84	3.44	2.05	2.25	2.36	3.13	1.47	1.31	2.00	2.55	3.12	2.62	2.58	1.84	2.54	.74
20	3.00	3.30	3.04	3.23	1.70	2.15	2.05	2.23	0.90	1.73	1.43	1.32	2.89	2.32	2.14	1.34	2.17	.77
21	3.16	3.16	2.25	2.87	1.62	2.14	2.32	2.53	1.58	1.82	1.00	1.75	2.72	2.50	2.11	1.40	2.18	.64
22	3.26	3.00	2.98	2.96	1.91	2.24	2.61	2.90	2.02	2.20	1.76	1.57	2.73	2.79	2.39	1.90	2.45	.54
23	2.93	3.37	2.20	3.03	2.36	2.55	2.60	2.61	1.13	2.06	1.47	2.02	2.98	2.53	2.27	1.65	2.36	.61
24	3.13	3.37	2.40	2.78	2.04	2.74	2.94	2.52	1.54	2.20	1.54	2.22	2.96	2.62	2.52	1.71	2.45	.55
25	2.40	3.11	2.31	2.49	2.05	2.45	1.85	2.23	1.37	2.22	1.04	1.79	2.68	2.28	1.98	1.49	2.11	.52
												mean	2.94	2.53	2.22	1.58	2.32	
												SD	.20	.14	.22	.22	.14	

True sep: (tax mean - comp mean)					algebraic error				absolute error				percent absolute error			
sample	x	y	z	v	x	y	z	v	x	y	z	v	x	y	z	v
1	2.02	1.73	1.62	1.21	-.47	-.68	-.60	.04	.47	.68	.60	.04	23	39	37	3
2	1.96	1.72	1.48	1.25	-.85	-.69	-.59	-.54	.85	.69	.59	.54	44	40	40	43
3	2.06	1.78	1.40	1.36	-.79	-.92	-.69	-.22	.79	.92	.69	.22	39	52	49	16
4	1.93	1.59	1.58	1.17	-1.03	-1.06	-.90	-.66	1.03	1.06	.90	.66	54	67	57	57
5	1.98	1.88	1.37	1.22	-1.23	-.69	-.80	-.44	1.23	.69	.80	.44	62	37	58	36
6	2.05	1.83	1.45	1.27	-.98	-.68	-.57	-.34	.98	.68	.57	.34	48	37	40	27
7	2.03	1.81	1.47	1.24	-.75	-.81	-.72	.03	.75	.81	.72	.03	37	45	49	2
8	1.90	1.76	1.52	0.95	-.89	-.68	-.59	-.17	.89	.68	.59	.17	47	39	39	18
9	2.05	1.85	1.61	1.22	-1.05	-.84	-.50	-.39	1.05	.84	.50	.39	51	45	31	32
10	2.04	1.67	1.66	1.35	-.98	-.82	-.83	-.19	.98	.82	.83	.19	48	49	50	14
11	2.10	1.95	1.44	1.27	-.97	-.52	-.63	-.61	.97	.52	.63	.61	46	27	44	48
12	2.05	1.76	1.53	1.31	-1.50	-.95	-1.25	-.22	1.50	.95	1.25	.22	73	54	82	17
13	1.97	1.55	1.50	1.27	-1.14	-.80	-.75	-.54	1.14	.80	.75	.54	58	51	50	43
14	1.83	1.61	1.45	1.28	-1.16	-.78	-.63	-.20	1.16	.78	.63	.20	64	48	43	15
15	2.02	1.82	1.54	1.27	-.89	-.77	-.37	-.19	.89	.77	.37	.19	44	42	24	15
16	2.11	1.95	1.63	1.27	-.73	-.50	-.87	-.34	.73	.50	.87	.34	35	26	53	27
17	2.13	1.75	1.64	1.17	-.95	-.97	-.56	-.21	.95	.97	.56	.21	45	55	34	18
18	2.04	1.66	1.52	1.25	-.83	-.72	-.37	-.53	.83	.72	.37	.53	41	43	25	42
19	1.99	1.82	1.59	1.29	-1.13	-.80	-.99	-.55	1.13	.80	.99	.55	57	44	62	43
20	2.07	1.80	1.51	1.16	-.82	-.52	-.63	-.18	.82	.52	.63	.18	40	29	42	16
21	2.11	1.80	1.68	1.16	-.61	-.70	-.43	-.24	.61	.70	.43	.24	29	39	25	21
22	1.94	1.80	1.33	1.39	-.79	-.99	-1.06	-.51	.79	.99	1.06	.51	41	55	79	36
23	2.13	1.78	1.40	1.44	-.85	-.75	-.87	-.21	.85	.75	.87	.21	40	42	62	15
24	1.98	1.70	1.64	1.15	-.98	-.92	-.88	-.56	.98	.92	.88	.56	50	54	54	48
25	1.97	1.67	1.45	1.23	-.71	-.61	-.53	-.26	.71	.61	.53	.26	36	37	37	21
mean	2.02	1.76	1.52	1.25	-.92	-.77	-.70	-.33	.92	.77	.70	.33	46	44	47	27
SD	.07	.10	.10	.09	.21	.14	.21	.19	.21	.14	.21	.18	10.93	9.45	14.77	14.62

APPENDIX H

"Taxonic Separation" Estimates From Nontaxonic Samples

Mean "separation" estimates (using abscissa cuts) over 300 curves per configuration for nontaxonic samples (12 curves per sample × 25 samples per configuration)

Sample Configuration[1]	r_{ij}	N	"separation"	SD
E300	.26	300	1.01	.16
E600	.26	600	1.15	.13
B300	.36	300	1.40	.18
B600	.36	600	1.64	.10
F300	.44	300	1.69	.15
F600	.44	600	1.87	.14
C100	.50	100	1.45	.20
C200	.50	200	1.80	.17
C300	.50	300	1.91	.17
C600	.50	600	2.22	.15
N300	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$	300	2.26	.13
N600	correlations same as for N300	600	2.59	.17
D300	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$	300	1.92	.19
D600	correlations same as for D300	600	2.17	.17

[1] The letter is the authors' code for the configuration of factor loadings used to produce the desired r_{ij}; the number part indicates sample size.

APPENDIX I

Estimates of Complement and Taxon Means From Taxonic Samples

Estimates based on the first and last abscissa cuts are given for all input/output combinations and then pooled for each variable. Ordering of configurations in this appendix:

N[1]	Taxonic Configuration				Expected r_{ij}[6]
	p[2]	sep	Factor Loadings[4]	File Code[5]	
100	.50	2.0	0	A1-50-20	.50
200	.50	2.0	0	A2-50-20	.50
300	.50	2.0	0	A3-50-20	.50
600	.50	2.0	0	A6-50-20	.50
300	.25	2.0	0	A3-25-20	.43
600	.25	2.0	0	A6-25-20	.43
300	.10	2.0	0	A3-10-20	.26
600	.10	2.0	0	A6-10-20	.26
300	.50	1.5	0	A3-50-15	.36
600	.50	1.5	0	A6-50-15	.36
300	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N3-50-20	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
600	.50	2.0	$x = .70$ $y = .50$ $z = .40$ $v = .20$	N6-50-20	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$
300	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D3-50-v1	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$
600	.50	$x = 2.00$ $y = 1.75$ $z = 1.50$ $v = 1.25$	$x = .70$ $y = .50$ $z = .40$ $v = .20$	D6-50-v1	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$

[1] Sample size. [2] Base rate. [3] Amount of separation in SD units, same for all four variables unless given otherwise. [4] Same for all variables in taxon and in complement groups unless given otherwise. [5] A filename coding used by the authors for identification of the Monte Carlo samples. [6] Same for all variables unless given otherwise.

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MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

output/input

	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.21	1.74	.11	1.84	-.01	1.94	-.04	1.97	.01	1.93	-.19	2.12
2	.23	1.48	.40	1.32	-.19	1.89	.38	1.34	.11	1.60	.27	1.44
3	.35	1.81	.12	1.99	.15	1.97	-.03	2.11	.35	1.80	.05	2.05
4	.07	2.08	.14	2.00	.34	1.79	.15	1.99	-.09	2.25	-.16	2.31
5	.18	1.86	.11	1.93	.07	1.97	.23	1.80	.15	1.89	.06	1.98
6	.11	1.98	.11	1.97	.16	1.93	.22	1.86	.01	2.07	.20	1.89
7	.36	1.65	.36	1.64	-.02	2.01	.01	1.98	.45	1.55	.35	1.65
8	.10	2.02	.09	2.03	.23	1.89	.08	2.04	.03	2.09	-.18	2.30
9	.34	1.94	.22	2.09	.42	1.84	.27	2.03	.30	1.99	-.02	2.38
10	.07	2.02	.02	2.08	.03	2.07	-.11	2.23	.30	1.75	.07	2.02
11	.17	1.65	.00	1.82	.00	1.82	.03	1.78	-.21	2.02	-.10	1.91
12	-.02	1.93	-.15	2.06	-.11	2.02	-.07	1.98	-.30	2.23	-.17	2.09
13	-.27	2.09	-.31	2.14	-.18	1.99	-.21	2.02	-.08	1.87	-.24	2.06
14	.01	2.08	-.35	2.42	.14	1.96	.13	1.97	.02	2.08	-.26	2.34
15	.11	1.60	.13	1.59	.06	1.64	.09	1.62	-.22	1.87	.07	1.64
16	.14	1.61	.16	1.60	-.09	1.81	-.20	1.90	.02	1.72	.13	1.63
17	.22	1.90	.20	1.92	.09	2.05	.09	2.05	.06	2.09	-.19	2.37
18	-.21	2.26	.06	1.94	.13	1.86	.28	1.67	.13	1.86	.38	1.55
19	.09	1.72	.17	1.64	.31	1.52	.22	1.60	-.11	1.90	.04	1.77
20	-.12	1.78	-.04	1.72	-.17	1.82	-.12	1.78	.14	1.57	.27	1.46
21	.21	1.70	.15	1.75	.01	1.86	-.09	1.94	.22	1.69	.13	1.76
22	.07	1.75	.20	1.63	.00	1.81	.08	1.74	-.01	1.82	.18	1.65
23	.22	1.91	.11	2.03	.01	2.13	.00	2.15	.35	1.77	.05	2.10
24	-.04	2.10	-.05	2.12	.29	1.78	.29	1.78	.10	1.96	.16	1.91
25	-.33	2.11	-.33	2.12	-.07	1.84	-.12	1.89	-.17	1.95	-.14	1.91

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output/input

	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.21	2.14	-.05	1.98	.13	1.82	-.03	1.96	-.23	2.16	-.14	2.07
2	-.25	1.94	.06	1.65	.27	1.44	.23	1.48	.05	1.65	-.22	1.91
3	.13	1.98	.29	1.85	.09	2.01	.32	1.82	.17	1.95	.27	1.87
4	.16	1.98	.37	1.76	.12	2.02	.01	2.14	.19	1.95	.21	1.93
5	.03	2.02	.07	1.98	.04	2.00	.08	1.96	.09	1.95	.06	1.99
6	-.06	2.15	-.05	2.13	-.07	2.16	.07	2.02	.04	2.05	.11	1.98
7	-.04	2.03	.14	1.85	-.04	2.03	.22	1.78	-.08	2.07	.03	1.96
8	.06	2.06	-.05	2.17	.11	2.00	-.02	2.14	.20	1.92	.21	1.91
9	.17	2.15	.23	2.07	.15	2.18	.14	2.18	.32	1.96	.27	2.03
10	.07	2.02	.20	1.86	.13	1.95	.21	1.86	.12	1.97	.04	2.05
11	-.03	1.84	.13	1.68	.03	1.79	.12	1.70	-.01	1.83	.11	1.71
12	-.06	1.98	-.14	2.06	-.13	2.05	-.06	1.97	-.03	1.94	.13	1.78
13	-.09	1.89	-.17	1.98	-.02	1.81	-.14	1.94	-.07	1.86	-.27	2.10
14	.16	1.94	.11	1.99	-.07	2.16	-.04	2.13	.26	1.85	.06	2.04
15	.26	1.49	.25	1.50	-.13	1.80	-.05	1.74	.25	1.50	.23	1.51
16	.09	1.65	-.21	1.91	-.37	2.04	-.12	1.84	-.49	2.15	-.15	1.86
17	-.01	2.17	-.06	2.22	.49	1.59	.27	1.84	.18	1.94	.11	2.03
18	.11	1.88	-.10	2.14	-.19	2.24	-.19	2.24	-.11	2.15	.07	1.93
19	.04	1.76	-.04	1.84	.06	1.74	.11	1.70	-.02	1.82	.01	1.79
20	.28	1.45	.27	1.46	.00	1.69	.02	1.67	.13	1.57	.18	1.54
21	.09	1.80	.24	1.67	.55	1.42	.49	1.47	-.09	1.95	-.27	2.09
22	-.13	1.92	-.01	1.82	-.19	1.97	.11	1.71	-.14	1.93	-.10	1.90
23	.06	2.09	.28	1.85	.18	1.95	.33	1.80	.07	2.08	.01	2.14
24	.07	2.00	.01	2.06	-.22	2.28	-.12	2.18	.00	2.06	.22	1.85
25	-.09	1.86	-.20	1.98	-.23	2.01	-.22	2.00	-.07	1.84	.05	1.72

Complement means:

A1-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.04	.04	-.12	-.03	-.14	.04	-.21	.08	.10	.01	.09	-.11
2	.35	.17	-.22	.15	.12	.05	-.34	.01	.23	.13	.12	.14
3	.04	.32	.18	.20	-.04	.17	.23	.24	.08	.15	-.04	-.04
4	.05	.15	.24	.07	-.04	.00	.18	-.11	.08	.15	.06	.18
5	.13	.11	.05	.09	.04	.08	-.02	-.02	.09	.03	.08	.12
6	.18	.04	.07	-.01	.14	-.10	.10	-.17	.04	.14	-.03	.16
7	.24	.24	-.01	.11	.11	.15	-.08	.08	.13	.09	.07	.03
8	-.00	.01	.17	.12	-.16	.18	.13	.16	.16	-.17	.03	-.04
9	.15	.24	.29	.26	-.06	-.03	-.01	-.04	.22	.26	.29	.30
10	-.01	.16	.05	.18	.02	.15	-.03	.28	-.02	.01	.08	-.10
11	-.02	.14	.02	-.06	.08	.29	-.05	-.07	-.10	-.15	.08	.01
12	-.13	-.07	-.01	-.15	.01	.12	.01	.11	-.14	-.19	-.03	-.26
13	-.26	-.19	-.18	-.06	-.06	-.04	-.20	.16	-.19	-.15	.02	-.22
14	-.16	.03	.12	.07	-.12	-.05	.09	.02	-.04	.08	.03	.05
15	.10	.10	.19	-.03	-.05	-.09	.05	-.16	.15	.19	.13	.13
16	.03	-.06	-.05	-.28	.04	.08	-.09	-.30	-.01	-.14	.04	.02
17	.03	.14	.06	.24	-.04	.20	-.06	.16	.08	-.06	.12	.08
18	.24	-.17	.10	-.06	.31	-.21	-.07	.14	-.07	.04	.18	-.20
19	.14	.05	.12	-.02	.26	-.00	.07	.11	-.11	.06	.05	-.13
20	.04	.06	.10	.09	.16	-.13	-.03	.15	-.13	.18	.13	-.06
21	.06	.31	-.06	.22	-.09	.12	-.07	.07	.16	.20	.02	.15
22	.16	.06	-.08	-.11	.41	.03	-.07	-.09	-.25	.03	-.00	-.02
23	.05	.28	.03	.20	-.12	.11	-.04	.21	.18	.17	.07	-.00
24	.13	-.05	.19	-.04	.01	-.14	.12	.03	.12	.09	.07	-.07
25	-.20	-.25	-.04	-.16	-.01	-.15	-.14	-.04	-.18	-.10	.10	-.12
mean:	.05	.07	.05	.04	.03	.03	-.02	.04	.02	.04	.07	.00
SD:	.14	.15	.12	.14	.14	.12	.12	.14	.14	.13	.07	.13
mean absolute error:									.12	.12	.08	.11
SD:									.06	.07	.06	.08

Taxon means:

A1-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.98	1.90	2.05	1.97	1.94	2.05	2.19	2.06	.04	-.15	-.14	-.09
2	1.37	1.54	1.91	1.56	1.51	1.88	2.08	1.82	-.14	-.34	-.17	-.25
3	2.05	1.83	1.94	1.92	1.94	1.79	2.08	1.99	.11	.04	-.15	-.07
4	2.10	1.99	1.90	2.07	2.06	2.08	1.91	1.91	.04	-.09	-.01	.17
5	1.91	1.93	1.99	1.95	1.85	1.89	1.97	1.96	.05	.04	.02	-.01
6	1.91	2.04	2.02	2.09	1.90	2.07	1.99	2.28	.00	-.03	.03	-.19
7	1.76	1.76	2.00	1.88	1.88	1.89	2.11	2.09	-.12	-.13	-.11	-.21
8	2.13	2.11	1.95	2.00	1.88	2.21	1.97	2.10	.25	-.10	-.01	-.10
9	2.17	2.06	2.01	2.04	2.05	1.93	2.13	2.04	.12	.14	-.12	.01
10	2.11	1.91	2.04	1.89	1.97	2.03	1.98	2.00	.13	-.12	.07	-.12
11	1.84	1.68	1.79	1.88	2.16	2.00	1.89	2.15	-.32	-.33	-.10	-.28
12	2.05	1.99	1.93	2.07	2.20	2.06	1.87	2.16	-.15	-.07	.06	-.09
13	2.08	2.00	1.99	1.85	2.24	2.20	1.85	1.93	-.16	-.20	.14	-.08
14	2.24	2.07	1.98	2.03	2.11	1.87	2.08	2.00	.13	.20	-.09	.03
15	1.62	1.61	1.55	1.72	1.92	1.56	1.84	1.97	-.31	.05	-.29	-.25
16	1.71	1.79	1.78	1.97	1.92	1.99	1.97	2.13	-.21	-.21	-.19	-.15
17	2.11	1.99	2.08	1.87	2.08	2.10	2.05	1.83	.03	-.11	.03	.05
18	1.72	2.21	1.89	2.08	1.97	2.01	1.90	2.13	-.25	.21	-.01	-.04
19	1.67	1.75	1.69	1.82	2.08	2.01	1.80	2.04	-.41	-.26	-.11	-.22
20	1.65	1.64	1.60	1.61	1.88	1.93	1.88	1.90	-.22	-.30	-.28	-.29
21	1.82	1.61	1.92	1.69	2.04	1.74	2.13	1.79	-.22	-.12	-.22	-.10
22	1.67	1.76	1.88	1.91	2.25	1.95	2.01	2.02	-.58	-.19	-.13	-.11
23	2.09	1.85	2.12	1.93	2.14	1.86	2.12	2.15	-.05	-.00	.01	-.22
24	1.93	2.11	1.87	2.10	1.85	1.95	1.95	2.20	.08	.16	-.08	-.09
25	1.98	2.03	1.81	1.93	2.03	2.17	1.86	2.05	-.05	-.14	-.05	-.11
mean:	1.91	1.89	1.91	1.91	1.99	1.97	1.98	2.03	-.09	-.08	-.08	-.11
SD:	.21	.18	.14	.14	.15	.14	.11	.12	.19	.15	.11	.11
mean absolute error:									.17	.15	.10	.13
SD:									.13	.09	.08	.08

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

A2-50-20

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.07	2.06	.15	1.86	.02	1.98	-.05	2.05	.00	2.00	.10	1.90
2	.08	1.75	.04	1.78	-.07	1.89	.11	1.73	.16	1.68	-.32	2.11
3	.24	1.67	-.28	2.21	.04	1.88	-.05	1.98	-.23	2.15	-.27	2.19
4	-.23	2.05	-.23	2.05	-.25	2.06	-.09	1.90	-.12	1.94	-.25	2.06
5	-.20	2.28	-.10	2.18	.05	2.04	-.10	2.19	.14	1.95	-.07	2.16
6	.14	1.92	.39	1.63	-.04	2.13	-.15	2.25	.06	2.01	-.21	2.31
7	-.47	2.33	-.19	2.05	-.22	2.08	-.19	2.05	-.09	1.95	-.16	2.02
8	-.30	1.66	-.19	1.58	-.47	1.78	-.22	1.60	-.03	1.45	-.17	1.56
9	-.10	2.16	.16	1.90	.20	1.86	.14	1.92	-.08	2.14	.02	2.03
10	-.20	2.25	-.14	2.20	-.15	2.21	-.29	2.35	.17	1.89	-.07	2.12
11	.09	2.14	.03	2.22	.15	2.06	.18	2.03	.23	1.96	.13	2.09
12	.16	1.84	.42	1.59	-.12	2.11	.00	1.99	-.30	2.29	.01	1.98
13	.04	2.14	-.07	2.25	.02	2.16	.03	2.15	.10	2.07	.09	2.08
14	.03	1.79	-.12	1.92	.04	1.78	.09	1.74	.00	1.81	-.08	1.88
15	-.08	2.20	.22	1.89	-.20	2.34	-.14	2.28	.11	2.00	.38	1.71
16	.17	1.90	.10	1.96	.01	2.05	.19	1.88	-.12	2.17	.05	2.01
17	.20	1.97	.07	2.15	.35	1.75	.24	1.91	.45	1.61	.33	1.78
18	-.17	1.99	-.05	1.88	.17	1.65	.20	1.62	-.06	1.88	.12	1.70
19	.22	1.81	.08	1.94	-.04	2.05	-.10	2.11	.27	1.76	.18	1.85
20	.09	1.85	-.02	1.96	.02	1.93	-.07	2.01	-.24	2.17	-.16	2.10
21	-.02	1.90	.08	1.79	.21	1.66	.06	1.81	-.02	1.90	-.04	1.91
22	.11	1.94	.10	1.94	.25	1.80	.32	1.73	.00	2.04	-.18	2.21
23	-.22	2.17	-.10	2.05	.24	1.72	.14	1.82	.03	1.92	.27	1.69
24	-.08	2.03	-.15	2.10	-.09	2.03	-.15	2.09	.25	1.68	.08	1.85
25	-.01	2.25	.13	2.10	.15	2.08	-.07	2.31	.07	2.17	.05	2.19

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	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.09	1.91	.00	2.00	-.08	2.08	-.30	2.28	.12	1.89	-.08	2.08
2	-.08	1.89	-.09	1.90	.01	1.82	.01	1.82	-.29	2.08	-.49	2.26
3	-.11	2.03	.12	1.80	-.24	2.17	-.11	2.03	-.21	2.13	-.21	2.13
4	-.21	2.03	-.29	2.10	-.29	2.10	-.24	2.05	-.11	1.92	-.20	2.01
5	-.23	2.32	-.14	2.22	-.07	2.16	-.06	2.14	-.20	2.29	-.09	2.17
6	.13	1.94	.04	2.03	.22	1.83	.00	2.08	.11	1.95	.13	1.93
7	-.14	1.99	-.33	2.19	-.02	1.88	-.26	2.12	.07	1.79	-.07	1.92
8	-.27	1.64	-.28	1.64	-.58	1.87	-.52	1.82	-.20	1.58	-.59	1.87
9	.22	1.83	-.01	2.07	.07	1.99	-.11	2.17	.21	1.85	.11	1.95
10	-.20	2.25	.16	1.90	.22	1.84	.16	1.90	.11	1.95	-.04	2.09
11	.26	1.93	.05	2.19	-.05	2.32	.05	2.19	.38	1.77	.31	1.86
12	.34	1.67	.23	1.77	-.18	2.17	-.09	2.08	-.37	2.36	.07	1.93
13	-.02	2.20	-.07	2.25	.15	2.01	-.04	2.21	.31	1.85	.32	1.84
14	.13	1.71	.17	1.67	-.08	1.88	-.13	1.93	.14	1.70	.05	1.78
15	.10	2.01	.13	1.98	.08	2.03	-.07	2.20	.27	1.82	.16	1.95
16	.04	2.02	.11	1.96	.01	2.05	-.03	2.09	-.04	2.10	-.15	2.20
17	.13	2.07	.09	2.12	.25	1.90	.29	1.84	.18	2.00	.09	2.13
18	.01	1.81	-.05	1.87	-.07	1.90	-.06	1.88	.05	1.78	-.17	2.00
19	-.31	2.31	-.16	2.17	-.10	2.11	-.07	2.09	.17	1.85	.21	1.82
20	.20	1.76	-.08	2.02	.02	1.93	.07	1.88	-.19	2.13	-.04	1.99
21	.10	1.77	-.18	2.05	-.32	2.19	-.25	2.12	.19	1.69	.35	1.52
22	.10	1.95	.01	2.03	-.26	2.29	-.17	2.20	.04	2.00	.03	2.01
23	-.07	2.02	-.07	2.02	.00	1.95	.16	1.80	.11	1.84	.08	1.87
24	.05	1.89	.06	1.88	-.10	2.05	-.08	2.02	-.05	1.99	.18	1.75
25	.36	1.87	.04	2.19	.26	1.96	.03	2.21	.13	2.11	.50	1.71

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Complement means:

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	.06	-.12	.01	.01	.04	-.13	-.07	-.18	.02	.01	.07	.19
2	-.06	.00	-.21	-.04	.03	.15	-.06	-.05	-.08	-.15	-.15	.01
3	-.20	.09	-.09	-.22	-.15	.07	-.08	.07	-.05	.02	-.01	-.29
4	-.19	-.25	-.22	-.18	-.04	-.07	-.07	-.01	-.15	-.19	-.15	-.17
5	-.09	-.13	-.09	-.04	.00	.02	.08	-.22	-.09	-.15	-.18	.17
6	.01	.06	.07	.13	.03	-.05	.04	.09	-.02	.11	.04	.04
7	-.18	-.35	-.14	-.02	-.14	-.18	-.16	.17	-.04	-.18	.02	-.18
8	-.19	-.37	-.44	-.27	.02	.10	-.40	.02	-.21	-.46	-.04	-.29
9	.11	-.07	.18	.07	-.05	-.13	.04	.09	.15	.06	.13	-.03
10	-.17	.04	-.13	.17	-.11	.10	-.10	.02	-.06	-.06	-.03	.15
11	.11	.06	.24	.19	.11	.03	-.04	.17	.00	.03	.28	.01
12	.14	.10	.10	-.28	.23	.01	.01	-.22	-.08	.09	.09	-.06
13	.01	-.02	.11	.19	.01	-.15	.11	.01	.00	.13	-.01	.18
14	-.04	.02	.07	.02	.15	.11	.00	-.09	-.19	-.09	.07	.11
15	.15	-.01	.02	.15	-.03	-.06	-.02	.15	.18	.05	.04	.01
16	.12	.08	-.03	-.05	.03	-.05	.08	-.04	.08	.13	-.11	-.01
17	.21	.20	.19	.29	-.01	.09	-.03	.01	.23	.11	.22	.28
18	.09	-.09	.00	-.03	.09	-.01	-.07	-.07	.00	-.08	.08	.05
19	.05	-.00	-.05	.12	-.11	.07	.02	.02	.16	-.07	-.07	.10
20	-.08	.03	.06	-.14	-.11	.01	-.05	-.11	.03	.02	.10	-.03
21	.04	-.15	.22	-.05	.10	-.09	-.08	.13	-.06	-.06	.30	-.19
22	.08	-.02	.13	-.08	-.01	-.14	.13	.00	.09	.12	-.00	-.08
23	.11	-.04	.08	.05	-.06	-.03	.04	-.05	.16	-.01	.05	.10
24	-.07	-.03	.05	.03	.17	-.02	-.05	-.08	-.24	-.01	.10	.11
25	.03	.02	.34	.15	.00	-.18	.30	.11	.03	.20	.04	.04
mean:	.00	-.04	.02	.01	.01	-.02	-.02	-.00	-.01	-.02	.04	.01
SD:	.12	.13	.17	.15	.09	.10	.12	.11	.12	.14	.12	.14
								mean absolute error:	.10	.10	.10	.12
								SD:	.07	.09	.08	.09

A2-50-20

Taxon means:

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.94	2.11	1.99	1.99	1.96	2.13	2.13	1.94	-.03	-.02	-.14	.05
2	1.87	1.82	2.01	1.86	2.05	1.96	1.97	1.96	-.18	-.14	.04	-.10
3	2.13	1.83	2.01	2.15	2.05	1.80	1.98	2.04	.07	.04	.03	.11
4	2.00	2.07	2.03	1.99	1.95	2.16	1.88	2.03	.06	-.10	.15	-.04
5	2.18	2.22	2.18	2.13	2.20	2.12	2.03	1.79	-.03	.10	.14	.34
6	2.07	2.01	2.00	1.93	2.21	1.97	1.91	1.97	-.15	.04	.08	-.04
7	2.04	2.22	2.00	1.87	2.04	2.01	2.00	1.82	-.00	.21	.00	.05
8	1.58	1.71	1.76	1.63	2.00	2.03	2.03	2.00	-.43	-.32	-.26	-.37
9	1.95	2.13	1.88	1.99	2.07	2.07	2.01	2.16	-.11	.06	-.13	-.17
10	2.22	2.02	2.18	1.89	2.19	2.09	2.17	1.81	.03	-.07	.01	.08
11	2.11	2.17	1.95	2.02	2.01	2.09	2.01	2.04	.10	.09	-.06	-.02
12	1.86	1.90	1.90	2.27	1.96	2.07	2.01	2.16	-.11	-.18	-.11	.11
13	2.16	2.20	2.06	1.98	2.01	2.01	2.00	2.02	.16	.19	.07	-.04
14	1.85	1.80	1.75	1.80	2.01	2.05	1.97	1.85	-.16	-.26	-.22	-.05
15	1.96	2.13	2.10	1.95	1.80	1.98	2.06	1.96	.15	.15	.04	-.01
16	1.95	1.98	2.09	2.11	1.98	1.94	2.04	2.03	-.03	.04	.05	.08
17	1.95	1.97	1.98	1.84	1.98	1.82	1.89	1.76	-.03	.15	.09	.08
18	1.73	1.92	1.82	1.85	2.03	1.78	1.90	1.94	-.29	.13	-.08	-.08
19	1.97	2.02	2.06	1.91	1.99	1.94	2.05	1.90	-.03	.08	.01	.01
20	2.02	1.92	1.89	2.08	2.00	1.95	2.03	2.01	.03	-.04	-.14	.07
21	1.84	2.02	1.65	1.92	1.90	1.98	1.95	2.27	-.07	.05	-.30	-.35
22	1.96	2.05	1.92	2.11	2.02	1.98	1.96	2.16	-.06	.07	-.05	-.05
23	1.85	1.99	1.87	1.91	1.86	1.87	1.95	2.02	-.01	.13	-.08	-.11
24	2.01	1.97	1.89	1.91	2.09	2.04	1.94	1.97	-.08	-.07	-.06	-.07
25	2.20	2.22	1.89	2.08	2.17	2.02	1.90	2.08	.03	.19	-.01	.00
mean:	1.98	2.02	1.95	1.97	2.02	1.99	1.99	1.99	-.05	.02	-.04	-.02
SD:	.15	.14	.13	.13	.10	.10	.07	.12	.13	.14	.11	.14
								mean absolute error:	.10	.12	.09	.10
								SD:	.10	.07	.08	.10

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

A3-50-20

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.25	1.70	.31	1.65	.26	1.70	.22	1.73	.13	1.82	-.24	2.17
2	-.04	2.04	.03	1.97	-.03	2.02	.04	1.95	.20	1.78	.13	1.86
3	-.19	2.11	-.14	2.06	.18	1.77	-.29	2.21	-.10	2.03	-.16	2.08
4	-.05	1.87	.06	1.78	.15	1.71	.31	1.57	.13	1.72	.04	1.80
5	-.07	1.96	.13	1.76	.12	1.78	-.11	2.00	-.14	2.03	.00	1.89
6	-.22	2.21	.18	1.78	-.06	2.04	.01	1.96	-.12	2.10	.27	1.67
7	-.01	2.18	.17	1.96	.15	1.99	-.03	2.19	.31	1.81	-.12	2.30
8	.03	1.75	-.16	1.95	.15	1.62	.05	1.73	.02	1.76	-.01	1.79
9	-.01	1.87	.14	1.75	.41	1.53	-.11	1.95	-.29	2.09	-.32	2.11
10	-.17	2.03	-.17	2.04	-.10	1.96	-.22	2.09	.01	1.85	-.02	1.89
11	.10	1.91	.16	1.84	.10	1.90	.09	1.92	-.02	2.04	.18	1.82
12	-.12	1.94	-.07	1.88	-.22	2.04	-.13	1.95	.10	1.71	.24	1.57
13	-.03	1.90	-.21	2.07	-.07	1.94	-.12	1.98	.14	1.73	.05	1.82
14	-.05	1.95	.13	1.80	.24	1.70	-.03	1.94	.43	1.54	.01	1.90
15	-.14	1.93	-.10	1.90	.21	1.62	.07	1.74	-.26	2.05	-.07	1.87
16	-.19	2.20	-.34	2.36	.05	1.96	-.11	2.12	.16	1.84	-.14	2.15
17	-.09	2.08	-.32	2.28	-.09	2.08	-.03	2.03	-.20	2.17	.12	1.90
18	.25	1.76	-.03	2.03	-.05	2.05	.22	1.78	.06	1.94	.26	1.75
19	.04	1.98	.01	2.01	-.01	2.04	.10	1.91	.03	1.99	.25	1.74
20	-.20	2.34	-.22	2.36	.05	2.08	-.25	2.40	.08	2.05	-.14	2.28
21	-.08	2.00	-.21	2.12	.26	1.70	-.14	2.06	.24	1.72	-.01	1.94
22	-.41	2.15	-.12	1.90	-.16	1.93	-.11	1.89	-.28	2.04	.15	1.66
23	-.11	1.68	.21	1.44	-.43	1.92	-.29	1.81	-.26	1.79	-.42	1.91
24	.01	2.01	.01	2.00	.21	1.78	-.03	2.05	.18	1.82	.32	1.66
25	.43	1.88	.16	2.21	.11	2.26	.18	2.18	-.05	2.46	.14	2.23

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	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.17	2.10	-.18	2.11	.14	1.80	-.17	2.10	.06	1.89	.04	1.90
2	.11	1.88	.13	1.86	-.06	2.06	-.04	2.04	.24	1.74	.31	1.66
3	-.07	2.00	-.12	2.05	-.01	1.94	.08	1.87	-.07	2.00	-.06	1.99
4	-.34	2.12	-.11	1.92	-.29	2.07	-.34	2.12	-.05	1.87	-.14	1.94
5	-.19	2.08	-.19	2.08	.01	1.88	.01	1.88	.05	1.84	.00	1.89
6	.00	1.97	.04	1.93	-.04	2.01	-.06	2.04	-.01	1.98	.03	1.94
7	.07	2.09	.02	2.14	.04	2.12	-.23	2.43	.10	2.04	.07	2.09
8	.07	1.71	-.05	1.83	-.39	2.19	-.11	1.89	-.32	2.12	-.34	2.14
9	.17	1.73	.13	1.76	.06	1.81	.14	1.75	-.18	2.00	.07	1.80
10	-.06	1.93	-.14	2.00	-.23	2.10	-.12	1.99	.13	1.73	-.12	1.98
11	.20	1.80	.14	1.86	-.10	2.12	-.18	2.21	.13	1.87	-.17	2.19
12	.02	1.80	.15	1.66	-.10	1.92	.06	1.76	-.04	1.85	-.11	1.92
13	-.03	1.90	-.08	1.95	-.11	1.97	-.02	1.89	.18	1.70	-.01	1.88
14	-.11	2.00	.05	1.87	-.06	1.96	.05	1.87	-.18	2.07	-.03	1.94
15	-.40	2.17	-.34	2.12	-.25	2.04	-.34	2.11	-.11	1.91	.32	1.51
16	.03	1.97	-.14	2.15	.09	1.91	-.46	2.48	.18	1.82	-.08	2.09
17	.04	1.97	.18	1.85	.00	2.00	.14	1.88	.09	1.93	.11	1.91
18	.09	1.91	.24	1.77	.04	1.97	-.26	2.25	-.11	2.11	-.27	2.26
19	.04	1.98	-.02	2.04	.00	2.02	-.23	2.28	-.06	2.09	-.06	2.09
20	-.06	2.20	.03	2.11	.11	2.03	-.02	2.16	-.07	2.22	.10	2.04
21	-.29	2.20	.21	1.74	.13	1.82	-.08	2.01	.06	1.88	-.10	2.03
22	-.20	1.97	-.45	2.19	-.10	1.88	-.28	2.04	.10	1.70	.06	1.74
23	-.48	1.96	-.34	1.85	-.12	1.69	.00	1.60	-.27	1.80	.02	1.59
24	-.20	2.24	.06	1.95	-.13	2.17	.27	1.71	.04	1.98	-.25	2.30
25	.10	2.27	.30	2.04	-.10	2.52	.31	2.03	.08	2.30	.05	2.34

Complement means:

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	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	.10	-.03	.04	.11	.19	.04	-.03	-.00	-.09	-.08	.08	.11
2	.07	.02	.13	.12	-.06	-.04	-.06	-.01	.12	.05	.19	.13
3	-.20	-.08	.02	-.06	.03	-.08	.00	.06	-.22	.01	.01	-.12
4	.14	-.17	-.11	-.07	.05	.03	-.08	.01	.08	-.20	-.03	-.08
5	.01	-.09	-.03	-.03	.17	-.03	-.03	-.01	-.16	-.06	.01	-.02
6	.15	-.08	-.01	-.06	.13	-.03	-.10	.04	.03	-.05	.09	-.10
7	.01	-.08	.09	.15	.02	.00	-.06	-.00	-.02	-.08	.16	.15
8	-.04	-.04	-.04	-.23	.00	.09	-.20	-.12	-.04	-.13	.16	-.11
9	-.10	.09	.22	-.14	-.09	-.03	.08	-.00	-.01	.11	.13	-.13
10	-.14	-.14	-.09	-.03	.11	.12	.01	-.09	-.25	-.26	-.11	.06
11	.14	.02	.05	.00	.05	-.00	.04	.03	.09	.02	.01	-.03
12	.01	.03	-.10	-.01	-.02	.07	-.13	-.02	.03	-.04	.03	.01
13	-.09	-.04	-.04	.07	.07	.01	-.01	.00	-.16	-.05	-.02	.07
14	.04	.02	.03	.06	.03	-.04	-.03	.05	.01	.06	.07	.02
15	-.04	-.27	.04	-.21	.05	-.03	.06	-.05	-.09	-.24	-.02	-.16
16	-.19	-.26	-.00	.14	.03	-.07	.08	.13	-.23	-.19	-.08	.01
17	-.08	.08	.02	-.04	-.00	.09	-.00	.05	-.08	-.02	.03	-.09
18	.15	.08	-.08	-.01	.08	.10	-.07	-.03	.07	-.03	-.01	.02
19	.12	-.07	-.01	-.01	.04	.00	-.08	-.07	.08	-.07	.07	.07
20	-.20	-.06	.03	.04	-.01	.07	.04	.02	-.19	-.13	-.01	.01
21	-.12	.02	-.04	.14	.07	.04	-.05	.05	-.19	-.02	.01	.09
22	-.03	-.38	-.10	-.09	.06	-.07	-.03	-.04	-.08	-.31	-.07	-.05
23	-.17	-.15	-.30	-.22	.03	-.04	-.07	-.01	-.20	-.11	-.23	-.20
24	.10	.12	-.08	.03	-.08	-.03	-.13	.06	.18	.14	.06	-.03
25	.16	.34	.09	-.02	-.08	.08	.04	-.08	.23	.27	.04	.05
mean:	-.01	-.04	-.01	-.01	.03	.01	-.03	-.00	-.04	-.06	.02	-.01
SD:	.12	.14	.10	.11	.07	.06	.07	.05	.13	.13	.09	.09
mean absolute error:									.12	.11	.07	.08
SD:									.08	.09	.06	.05

Taxon means:

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	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.85	1.97	1.90	1.84	2.04	1.90	2.02	1.95	-.19	.07	-.12	-.11
2	1.93	1.98	1.85	1.86	2.06	2.04	1.99	2.01	-.13	-.06	-.13	-.14
3	2.12	2.01	1.92	1.99	2.07	1.92	2.01	1.98	.05	.09	-.09	.01
4	1.72	1.97	1.92	1.89	1.81	2.05	2.06	2.00	-.10	-.08	-.14	-.11
5	1.88	1.97	1.92	1.92	2.07	2.00	1.96	2.02	-.18	-.02	-.05	-.11
6	1.80	2.06	1.98	2.03	1.78	1.98	1.98	2.09	.02	.08	-.00	-.06
7	2.15	2.25	2.05	1.99	2.06	2.17	2.07	1.80	.09	.08	-.02	.19
8	1.82	1.82	1.82	2.02	2.05	2.00	1.94	1.90	-.22	-.18	-.12	.12
9	1.94	1.79	1.69	1.97	1.91	2.03	1.99	1.88	.03	-.24	-.30	.09
10	2.00	2.01	1.96	1.89	2.08	2.06	1.84	1.99	-.07	-.05	.12	-.10
11	1.86	1.99	1.97	2.01	1.93	2.03	1.91	2.06	-.07	-.04	.05	-.05
12	1.80	1.79	1.92	1.83	2.01	2.11	1.93	1.78	-.21	-.32	-.01	.05
13	1.96	1.91	1.91	1.80	2.16	1.98	1.91	1.98	-.20	-.07	-.00	-.18
14	1.88	1.90	1.88	1.86	1.99	1.99	2.08	1.99	-.11	-.10	-.20	-.13
15	1.84	2.05	1.77	2.00	2.02	2.00	1.83	2.09	-.18	.06	-.06	-.10
16	2.21	2.28	2.01	1.86	2.07	2.23	1.89	2.01	.14	.05	.12	-.15
17	2.07	1.94	1.99	2.03	2.06	2.10	2.16	1.96	.01	-.17	-.17	.08
18	1.85	1.93	2.08	2.01	2.08	2.01	2.09	2.08	-.23	-.08	-.02	-.07
19	1.89	2.10	2.04	2.03	1.94	2.02	1.97	1.98	-.05	.08	.07	.05
20	2.35	2.20	2.11	2.10	2.16	2.15	2.06	1.98	.19	.05	.05	.11
21	2.04	1.92	1.97	1.80	2.00	1.96	2.07	1.92	.04	-.05	-.09	-.11
22	1.82	2.13	1.88	1.87	2.07	2.14	1.93	2.01	-.25	-.01	-.06	-.13
23	1.72	1.71	1.82	1.76	2.04	1.95	1.90	2.06	-.31	-.24	-.08	-.30
24	1.91	1.89	2.11	1.99	1.90	2.02	2.02	2.12	.01	-.13	.09	-.14
25	2.21	1.98	2.29	2.43	2.09	1.91	2.14	1.97	.12	.07	.16	.46
mean:	1.94	1.98	1.95	1.95	2.02	2.03	1.99	1.98	-.07	-.05	-.04	-.03
SD:	.16	.14	.12	.13	.09	.08	.09	.08	.13	.11	.11	.15
mean absolute error:									.13	.10	.09	.13
SD:									.08	.07	.07	.09

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MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.09	1.90	-.08	2.08	-.13	2.13	-.12	2.12	.18	1.81	-.15	2.15
2	-.09	1.99	-.15	2.05	.12	1.80	.07	1.85	-.11	2.01	-.01	1.92
3	-.09	1.94	-.27	2.12	.11	1.75	.01	1.85	-.24	2.09	-.20	2.05
4	-.03	2.10	-.07	2.14	.05	2.03	-.20	2.27	.18	1.90	.19	1.89
5	-.09	2.27	.08	2.08	-.04	2.22	.33	1.80	-.02	2.20	.29	1.86
6	-.08	2.09	-.13	2.13	.03	1.98	-.06	2.07	-.04	2.05	-.08	2.08
7	.13	1.70	-.17	1.98	-.17	1.98	.11	1.72	-.31	2.11	-.08	1.89
8	.01	2.00	.07	1.94	.08	1.93	-.04	2.06	-.15	2.16	.00	2.02
9	.05	1.95	.04	1.96	-.16	2.16	-.04	2.04	-.15	2.14	.13	1.87
10	-.21	2.19	.21	1.79	.26	1.74	.11	1.88	-.06	2.05	.10	1.89
11	-.15	2.16	-.19	2.19	-.02	2.04	.04	1.98	.02	2.00	.04	1.98
12	-.23	2.00	-.49	2.23	-.46	2.20	-.47	2.21	-.33	2.09	-.22	1.99
13	.01	2.07	.03	2.05	-.05	2.15	.07	2.00	-.24	2.36	.09	1.98
14	.07	1.92	.04	1.94	-.14	2.11	-.32	2.28	-.03	2.02	-.26	2.22
15	.32	1.85	.03	2.16	.02	2.17	.21	1.97	.04	2.15	-.04	2.24
16	.09	2.04	.01	2.12	.02	2.11	-.08	2.20	.00	2.12	.26	1.88
17	-.01	1.98	.19	1.79	-.14	2.11	.14	1.84	-.22	2.18	.12	1.86
18	-.40	2.00	-.23	1.87	-.50	2.08	-.35	1.96	-.23	1.87	-.06	1.73
19	.21	1.84	-.05	2.09	-.11	2.14	-.01	2.05	-.36	2.39	-.28	2.31
20	.18	1.68	-.15	1.97	-.21	2.02	.02	1.81	-.07	1.90	-.01	1.85
21	.05	1.97	.14	1.89	.01	2.00	.06	1.96	-.15	2.14	.21	1.83
22	.10	1.91	.01	2.01	.08	1.93	-.16	2.19	.15	1.86	-.09	2.11
23	.25	1.80	.00	2.05	.06	2.00	-.09	2.15	.21	1.84	-.17	2.23
24	.06	2.07	.17	1.95	-.02	2.16	-.03	2.17	.26	1.85	.01	2.12
25	-.26	2.21	-.03	1.97	.03	1.92	-.11	2.06	-.05	1.99	-.13	2.08

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	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.22	1.77	.00	1.99	-.22	2.22	-.23	2.23	.03	1.96	.01	1.98
2	-.07	1.98	-.21	2.10	-.19	2.08	-.02	1.93	-.08	1.98	-.21	2.10
3	-.05	1.90	.07	1.79	-.09	1.94	-.27	2.11	-.14	1.99	.18	1.69
4	.02	2.06	.19	1.89	-.18	2.25	.09	1.99	-.15	2.22	.10	1.97
5	.19	1.97	.11	2.05	.27	1.87	.21	1.94	.17	1.99	-.01	2.19
6	.22	1.81	.22	1.81	.15	1.88	.09	1.93	-.08	2.09	-.16	2.16
7	-.30	2.10	-.13	1.95	-.08	1.90	-.24	2.05	-.16	1.97	-.10	1.92
8	.10	1.91	.00	2.02	-.10	2.11	-.13	2.14	.20	1.82	.24	1.78
9	.05	1.95	-.03	2.03	.10	1.90	.12	1.88	.13	1.88	.07	1.93
10	.04	1.95	-.22	2.21	.30	1.70	.05	1.94	-.06	2.05	.24	1.76
11	.02	1.99	.11	1.91	-.07	2.08	.29	1.74	-.17	2.17	-.14	2.14
12	-.24	2.01	-.15	1.93	-.30	2.06	.07	1.73	.19	1.62	.06	1.73
13	.09	1.98	.12	1.95	.09	1.99	.11	1.96	-.05	2.14	.18	1.88
14	.13	1.86	-.19	2.16	-.23	2.20	-.09	2.06	.24	1.76	-.07	2.05
15	.09	2.09	.21	1.97	.00	2.19	-.32	2.53	.08	2.11	.17	2.01
16	-.03	2.15	-.16	2.27	.12	2.01	.22	1.92	-.13	2.25	.25	1.89
17	-.28	2.24	-.02	1.99	-.01	1.98	.07	1.90	.10	1.87	.07	1.90
18	-.24	1.87	-.33	1.95	-.34	1.96	-.15	1.80	-.13	1.79	-.34	1.95
19	.06	1.98	-.05	2.09	.01	2.03	.11	1.94	.23	1.82	.31	1.75
20	-.06	1.89	-.42	2.21	-.02	1.85	-.01	1.85	-.05	1.88	-.20	2.01
21	.21	1.83	.01	2.00	-.12	2.12	-.20	2.18	-.05	2.05	.02	1.99
22	.05	1.97	.16	1.85	.20	1.80	-.02	2.04	-.07	2.10	.11	1.90
23	.08	1.98	.16	1.89	.07	1.99	-.02	2.08	.28	1.77	-.11	2.17
24	.09	2.04	.16	1.96	.42	1.67	.00	2.14	.02	2.12	.21	1.90
25	-.03	1.97	-.06	2.01	-.10	2.04	-.19	2.14	.09	1.86	.00	1.94

Complement means:

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	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.12	-.04	.03	.00	-.06	-.05	.03	.04	-.06	.01	.01	-.04
2	-.03	-.11	-.05	-.12	-.04	.09	.00	.05	.01	-.20	-.06	-.17
3	-.16	-.10	.08	-.16	-.11	.10	.00	-.04	-.04	-.20	.08	-.11
4	-.03	.08	.06	-.05	.03	.09	.08	-.02	-.06	-.01	-.02	-.03
5	.23	.08	.05	.14	.08	.04	.06	.09	.15	.04	-.01	.05
6	-.09	.07	.03	.01	-.01	.05	.04	.09	-.08	.02	-.01	-.08
7	-.05	-.08	-.19	-.18	-.02	.00	-.06	.02	-.03	-.08	-.13	-.21
8	.01	-.04	.14	-.02	.09	.04	-.02	-.02	-.08	-.08	.16	.00
9	.04	.05	-.02	.03	.02	.10	-.04	.00	.02	-.06	.03	.03
10	.14	-.13	.18	.06	.01	.01	.06	-.03	.14	-.14	.12	.09
11	-.04	.08	-.05	-.07	.01	-.02	.10	.08	-.05	.10	-.15	-.15
12	-.39	-.11	-.21	-.15	-.08	.08	-.02	-.04	-.31	-.19	-.19	-.11
13	.07	.08	.07	-.07	-.03	-.02	.02	.00	.10	.10	.05	-.07
14	-.18	-.07	-.02	-.01	-.07	.08	.07	.01	-.11	-.14	-.09	-.01
15	.06	.07	.09	.04	.03	.01	.06	-.05	.03	.06	.04	.09
16	.06	.05	.08	.00	.02	.01	.09	.03	.05	.04	-.01	-.03
17	.15	.01	-.12	-.04	.08	.04	.01	.04	.07	-.03	-.13	-.08
18	-.21	-.30	-.36	-.23	-.06	.01	-.01	-.05	-.16	-.30	-.35	-.18
19	-.11	.09	.09	-.04	-.11	.05	.10	-.04	.00	.04	-.01	.00
20	-.05	-.09	-.16	-.05	-.01	.02	-.05	.02	-.04	-.11	-.10	-.07
21	.13	-.05	.08	-.11	.12	-.08	.10	.02	.02	.03	-.02	-.12
22	-.08	.08	.08	.09	-.05	.05	.01	.01	-.03	.02	.07	.08
23	-.09	.13	.01	.19	-.05	-.02	.01	.12	-.04	.15	.00	.07
24	.05	.07	.09	.23	.03	-.02	-.03	.00	.02	.10	.13	.23
25	-.09	-.17	.00	-.02	-.03	-.06	-.05	-.01	-.06	-.10	.05	-.01
mean:	-.03	-.01	.00	-.02	-.01	.02	.02	.01	-.02	-.04	-.02	-.03
SD:	.13	.10	.12	.11	.06	.05	.05	.05	.09	.11	.11	.10
								mean absolute error:	.07	.09	.08	.08
								SD:	.06	.07	.08	.06

Taxon means:

A6-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	2.12	2.04	1.96	2.00	2.07	2.09	1.94	2.04	.04	-.05	.02	-.04
2	1.94	2.01	1.96	2.02	1.97	2.05	2.01	1.99	-.03	-.04	-.05	.03
3	2.01	1.95	1.78	2.01	2.01	2.01	1.92	1.99	-.01	-.06	-.14	.02
4	2.10	1.99	2.02	2.12	2.09	2.02	2.04	2.02	.01	-.03	-.01	.11
5	1.91	2.09	2.13	2.02	1.99	2.00	1.99	2.06	-.07	.09	.14	-.04
6	2.09	1.94	1.98	2.00	2.04	2.03	2.06	2.01	.05	-.08	-.08	-.01
7	1.86	1.90	2.00	1.99	2.01	1.95	1.93	1.95	-.15	-.06	.07	.04
8	2.00	2.05	1.87	2.03	2.03	2.08	2.04	2.15	-.03	-.03	-.16	-.12
9	1.96	1.96	2.02	1.97	1.93	1.97	2.07	2.06	.03	-.02	-.05	-.09
10	1.85	2.11	1.82	1.93	1.94	1.96	1.96	1.99	-.09	.16	-.15	-.06
11	2.05	1.94	2.06	2.08	1.98	1.98	1.96	1.99	.07	-.04	.09	.09
12	2.14	1.88	1.98	1.92	1.92	2.05	1.90	1.99	.22	-.16	.08	-.07
13	2.01	2.00	2.00	2.16	1.90	2.00	1.94	2.06	.11	.00	.07	.11
14	2.15	2.05	2.01	1.99	2.04	2.11	1.99	2.06	.11	-.06	.02	-.07
15	2.12	2.12	2.09	2.15	2.10	1.96	2.05	2.05	.02	.15	.04	.10
16	2.06	2.07	2.05	2.13	2.02	2.00	2.10	2.05	.05	.07	-.06	.08
17	1.83	1.96	2.08	2.01	2.05	1.99	2.00	1.97	-.22	-.03	.08	.05
18	1.85	1.92	1.97	1.87	2.04	2.06	1.89	2.10	-.18	-.15	.08	-.23
19	2.15	1.95	1.96	2.08	2.04	1.98	1.99	2.03	.11	-.03	-.03	.05
20	1.88	1.91	1.98	1.88	2.02	2.00	1.99	1.94	-.14	-.09	-.02	-.07
21	1.89	2.05	1.94	2.10	1.91	2.00	2.03	2.06	-.02	.05	-.09	.05
22	2.10	1.93	1.93	1.92	2.02	1.97	1.92	2.02	.08	-.04	.01	-.10
23	2.14	1.92	2.05	1.87	2.02	2.03	2.03	1.92	.13	-.10	.02	-.05
24	2.08	2.06	2.03	1.88	1.98	2.08	2.04	2.04	.10	-.02	-.01	-.16
25	2.04	2.12	1.95	1.96	2.05	1.92	1.97	2.08	-.01	.19	-.02	-.11
mean:	2.01	2.00	1.98	2.00	2.01	2.01	1.99	2.02	.01	-.02	-.01	-.02
SD:	.11	.07	.08	.09	.05	.05	.06	.05	.10	.09	.08	.09
								mean absolute error:	.08	.07	.06	.08
								SD:	.06	.05	.05	.06

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

A3-25-20

```
          ----------------------------- output/input --------------------------------
           y/x           x/y           z/x           x/z           v/x           x/v
sample    comp   tax    comp   tax    comp   tax    comp   tax    comp   tax    comp   tax

   1       .17  1.56     .02  1.94    -.01  2.04     .05  1.86     .07  1.81     .13  1.65
   2       .17  1.59     .05  1.99    -.05  2.30     .15  1.66     .10  1.83     .11  1.79
   3      -.03  2.18     .07  1.91     .15  1.69     .20  1.55    -.01  2.10     .08  1.88
   4       .02  2.32    -.02  2.49     .14  1.88     .04  2.28     .19  1.73     .03  2.29
   5       .59   .56     .40  1.52     .19  2.57     .34  1.80     .25  2.28     .22  2.41
   6      -.04  2.37     .01  2.18     .03  2.11     .37   .95     .05  2.06    -.01  2.24
   7       .21  1.51     .11  1.91     .26  1.31    -.01  2.36     .03  2.20     .20  1.54
   8      -.23  2.64    -.04  2.10    -.13  2.35    -.03  2.07     .12  1.63     .07  1.79
   9      -.06  2.21     .07  1.85    -.07  2.24     .02  1.98    -.02  2.09     .24  1.36
  10      -.06  2.13     .11  1.68     .04  1.86     .11  1.67    -.08  2.21    -.03  2.06
  11      -.32  2.52    -.12  2.01    -.09  1.96    -.05  1.86    -.17  2.14    -.12  2.02
  12       .37  1.24     .24  1.65     .25  1.60     .04  2.25     .17  1.86     .04  2.25
  13      -.01  1.97     .15  1.49    -.11  2.26    -.25  2.68     .05  1.79     .15  1.50
  14       .26  1.97     .26  1.96     .19  2.20     .13  2.41     .29  1.86     .22  2.09
  15      -.04  2.49     .21  1.62     .26  1.42    -.03  2.47     .02  2.26     .05  2.18
  16       .01  2.05     .06  1.91    -.06  2.25    -.00  2.09    -.18  2.60     .02  2.03
  17       .14  1.63    -.00  2.19     .13  1.66     .21  1.36     .11  1.75     .02  2.09
  18       .10  1.76     .02  1.95     .04  1.92    -.01  2.04    -.11  2.27     .04  1.92
  19       .06  2.63     .31  1.53     .27  1.71     .34  1.40     .22  1.93     .12  2.40
  20      -.28  2.21    -.03  1.59    -.30  2.26    -.05  1.65    -.08  1.72    -.02  1.56
  21       .14  1.84     .23  1.58     .01  2.19     .23  1.57     .19  1.70     .32  1.33
  22       .16  1.73     .13  1.80     .18  1.68     .05  2.04     .26  1.45     .05  2.02
  23      -.07  1.79    -.12  1.91     .07  1.51    -.15  1.97    -.07  1.80    -.09  1.84
  24      -.06  1.41    -.18  1.67    -.02  1.32    -.26  1.85    -.27  1.87    -.29  1.90
  25       .00  1.49     .19  1.01    -.20  2.03    -.19  1.99    -.24  2.13    -.34  2.39
```

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```
          ----------------------------- output/input --------------------------------
           z/y           y/z           v/y           y/v           v/z           z/v
sample    comp   tax    comp   tax    comp   tax    comp   tax    comp   tax    comp   tax

   1       .07  1.82     .07  1.81     .18  1.54     .10  1.75    -.00  2.00     .13  1.67
   2       .02  2.06    -.06  2.32     .05  1.98    -.08  2.38     .11  1.80     .04  2.02
   3      -.04  2.19     .08  1.87    -.01  2.10     .16  1.67     .19  1.57     .19  1.56
   4       .09  2.09     .29  1.36     .10  2.03     .08  2.10     .28  1.38     .06  2.19
   5       .30  2.00     .39  1.57     .06  3.22     .21  2.46     .26  2.23     .11  2.98
   6       .25  1.35     .05  2.03     .02  2.16    -.15  2.74     .14  1.74     .18  1.61
   7      -.10  2.71    -.07  2.60     .00  2.31     .09  1.96     .16  1.72     .05  2.15
   8       .05  1.83     .20  1.42     .31  1.10     .31  1.08     .01  1.96    -.01  2.01
   9      -.02  2.09    -.03  2.13     .04  1.94     .13  1.68     .16  1.58     .15  1.63
  10       .09  1.72     .04  1.88    -.09  2.23    -.19  2.51    -.14  2.37    -.01  2.00
  11      -.10  1.97    -.01  1.75    -.17  2.14    -.13  2.06     .02  1.69    -.03  1.81
  12       .13  1.99     .14  1.95     .10  2.07     .18  1.84     .15  1.92     .25  1.62
  13       .01  1.91    -.01  1.97     .02  1.89     .09  1.66    -.15  2.40     .09  1.66
  14       .28  1.89     .34  1.67     .18  2.24     .14  2.38     .28  1.90     .24  2.04
  15       .03  2.26     .09  2.03     .05  2.19     .11  1.98     .36  1.07     .10  2.00
  16      -.05  2.23     .21  1.49    -.10  2.35    -.13  2.45     .10  1.81     .01  2.06
  17       .26  1.17     .06  1.96    -.13  2.68    -.17  2.83     .06  1.96     .11  1.74
  18       .12  1.73    -.02  2.05    -.00  2.01     .14  1.68    -.08  2.20     .10  1.77
  19       .13  2.32     .14  2.31     .24  1.84     .13  2.34     .23  1.88     .23  1.89
  20      -.10  1.78    -.13  1.84    -.15  1.88    -.20  2.01    -.10  1.78    -.05  1.66
  21       .16  1.77     .02  2.16     .19  1.70     .07  2.04     .20  1.67     .23  1.57
  22       .14  1.77     .19  1.65    -.02  2.22     .21  1.60    -.02  2.22    -.03  2.26
  23      -.30  2.28    -.20  2.07    -.09  1.85     .02  1.61    -.05  1.76    -.07  1.79
  24       .00  1.27    -.20  1.70     .03  1.22    -.01  1.31    -.22  1.77    -.22  1.75
  25      -.29  2.25    -.23  2.10    -.07  1.69     .14  1.14     .12  1.19     .01  1.47
```

Complement means:

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	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	.07	.11	.06	.08	.02	.04	.04	.00	.05	.08	.03	.08
2	.10	.01	.00	.08	.00	-.09	-.01	.06	.10	.11	.02	.02
3	.11	.07	.10	.06	.06	-.06	.05	-.04	.06	.12	.05	.10
4	.02	.13	.10	.19	.01	.01	.02	.11	.00	.12	.07	.08
5	.32	.40	.20	.19	-.07	-.04	.09	-.11	.40	.44	.11	.29
6	.13	-.05	.16	.07	.08	-.22	.02	.03	.04	.17	.13	.04
7	.10	.08	.07	.06	.09	-.01	-.04	.06	.01	.09	.11	.00
8	.00	.09	-.03	.15	.01	.06	.01	.03	.00	.04	-.04	.12
9	.11	.01	.02	.06	.01	.05	.02	.13	.10	-.04	.00	-.07
10	.06	-.07	.04	-.10	.02	.01	.03	-.01	.05	-.08	.01	-.09
11	-.10	-.15	-.07	-.11	.04	-.08	-.01	.06	-.13	-.08	-.06	-.17
12	.11	.23	.21	.14	.02	-.03	.18	-.05	.08	.26	.03	.19
13	.01	.02	.00	-.03	.08	.04	-.02	-.10	-.06	-.02	.02	.07
14	.20	.24	.24	.25	-.02	.03	.11	-.06	.22	.21	.12	.30
15	.07	.05	.13	.14	-.02	-.07	.05	-.12	.10	.13	.08	.26
16	.03	.03	-.03	-.06	.04	-.03	-.01	.08	-.01	.06	-.02	-.14
17	.08	.01	.17	.01	-.04	-.06	-.01	.03	.12	.07	.18	-.01
18	.02	.07	.09	-.06	-.10	-.04	.12	-.08	.12	.12	-.03	.02
19	.26	.11	.21	.23	.10	.01	.04	-.03	.15	.10	.18	.27
20	-.03	-.20	-.15	-.11	.04	.02	-.07	.03	-.07	-.22	-.08	-.14
21	.26	.08	.14	.19	.07	-.02	.11	-.07	.19	.09	.03	.26
22	.08	.18	.10	.07	-.04	.00	.10	.03	.12	.19	.00	.04
23	-.12	-.08	-.10	-.07	-.05	.06	.07	.04	-.07	-.14	-.17	-.12
24	-.24	-.09	-.08	-.16	-.03	.01	-.06	.08	-.21	-.10	-.02	-.24
25	-.19	-.09	-.22	-.13	.01	.09	-.07	.03	-.20	-.18	-.15	-.17
mean:	.06	.05	.05	.05	.01	-.01	.03	.01	.05	.06	.02	.04
SD:	.13	.13	.12	.12	.05	.06	.06	.07	.13	.14	.09	.16
mean absolute error:									.10	.13	.07	.13
SD:									.09	.09	.06	.09

Taxon means:

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	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.82	1.71	1.84	1.79	1.91	1.93	2.09	1.90	-.09	-.22	-.25	-.11
2	1.81	2.10	2.13	1.87	1.88	2.08	2.09	1.93	-.07	.02	.03	-.06
3	1.78	1.90	1.81	1.92	2.08	2.03	2.13	1.90	-.30	-.12	-.31	.02
4	2.35	1.93	2.05	1.71	2.19	2.01	2.00	2.01	.16	-.08	.05	-.29
5	1.91	1.53	2.52	2.58	1.98	1.98	2.07	2.01	-.07	-.45	.45	.57
6	1.79	2.38	1.69	1.99	2.18	2.05	1.94	2.00	-.38	.33	-.25	-.01
7	1.94	2.02	2.06	2.08	2.05	2.01	2.02	2.03	-.11	.02	.04	.05
8	1.98	1.71	2.06	1.56	1.92	1.88	2.00	1.97	.06	-.17	.06	-.40
9	1.73	2.00	1.99	1.87	1.93	2.05	2.06	1.97	-.20	-.05	-.08	-.10
10	1.81	2.17	1.86	2.27	1.88	2.13	1.98	2.01	-.07	.04	-.12	.26
11	1.97	2.11	1.91	1.99	2.24	1.99	2.05	2.03	-.27	.12	-.14	-.04
12	2.05	1.67	1.74	1.95	1.88	1.89	1.81	1.96	.17	-.21	-.08	-.01
13	1.89	1.86	1.95	2.02	2.03	2.19	2.00	1.99	-.14	-.33	-.06	.03
14	2.15	2.01	2.04	2.00	2.01	1.81	2.19	2.01	.14	.20	-.15	-.01
15	2.09	2.17	1.89	1.84	2.23	2.05	1.92	1.91	-.14	.12	-.02	-.07
16	2.01	2.00	2.18	2.25	1.85	1.92	2.22	2.04	.16	.07	-.04	.21
17	1.88	2.14	1.52	2.13	2.03	2.08	1.82	2.06	-.15	.05	-.30	.07
18	1.97	1.83	1.80	2.16	1.92	1.97	1.98	1.98	.05	-.14	-.18	.18
19	1.77	2.42	1.97	1.88	1.90	2.02	2.04	1.96	-.13	.40	-.07	-.07
20	1.60	2.02	1.90	1.79	2.09	2.11	1.95	2.11	-.49	-.08	-.05	-.32
21	1.49	2.01	1.84	1.69	1.94	2.05	2.00	1.82	-.44	-.03	-.16	-.13
22	1.95	1.66	1.90	1.96	1.92	1.84	2.02	1.98	.03	-.18	-.11	-.01
23	1.91	1.82	1.86	1.80	2.03	2.03	1.91	2.11	-.12	-.20	-.05	-.31
24	1.81	1.47	1.45	1.62	2.08	1.83	1.77	1.97	-.27	-.35	-.33	-.35
25	1.68	1.47	1.74	1.57	2.08	2.04	1.89	2.04	-.39	-.57	-.14	-.48
mean:	1.89	1.92	1.91	1.93	2.01	2.00	2.00	1.99	-.12	-.07	-.09	-.06
SD:	.17	.25	.21	.23	.11	.09	.11	.06	.19	.22	.16	.22
mean absolute error:									.18	.18	.14	.17
SD:									.13	.14	.11	.16

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MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.02	1.90	-.08	2.08	-.07	2.03	-.17	2.34	-.04	1.95	.02	1.78
2	.27	1.23	.08	1.81	-.05	2.21	-.05	2.21	.18	1.52	.09	1.79
3	-.12	2.03	-.08	1.92	-.12	2.04	-.07	1.91	-.11	2.02	-.03	1.79
4	-.08	2.25	.01	2.00	.06	1.84	.13	1.64	.07	1.81	-.15	2.49
5	.38	1.05	-.01	2.43	.26	1.47	.01	2.35	.16	1.83	.08	2.09
6	-.01	1.88	-.24	2.47	-.06	2.01	.07	1.67	-.08	2.05	.09	1.60
7	.01	2.52	.14	2.13	.23	1.81	.31	1.58	.10	2.24	.18	1.98
8	-.08	2.04	-.14	2.17	-.17	2.25	-.26	2.48	.03	1.76	.00	1.83
9	.09	1.85	.10	1.84	.07	1.91	.16	1.66	.10	1.83	-.07	2.33
10	.02	1.88	-.07	2.13	-.05	2.06	-.09	2.18	.06	1.77	-.08	2.14
11	.09	1.82	.03	2.01	.04	1.97	-.06	2.25	.04	1.96	.02	2.01
12	.03	1.59	-.13	1.97	-.22	2.17	-.25	2.24	.02	1.62	-.06	1.81
13	.04	2.08	.05	2.06	.09	1.93	-.10	2.51	-.02	2.26	.00	2.20
14	.06	1.83	.25	1.26	.10	1.71	.12	1.64	-.21	2.62	.05	1.86
15	-.07	2.34	-.14	2.53	-.01	2.16	.08	1.87	-.02	2.19	.06	1.95
16	-.01	2.01	.06	1.80	-.10	2.24	.04	1.87	.01	1.94	.06	1.80
17	.01	2.12	.06	1.96	-.04	2.29	.19	1.50	.08	1.90	.00	2.16
18	.01	2.32	.15	1.87	-.04	2.47	.02	2.29	.16	1.83	-.03	2.45
19	.05	1.62	.09	1.52	-.19	2.32	.11	1.46	-.06	1.95	-.16	2.24
20	-.28	1.98	-.29	2.00	-.19	1.76	-.21	1.82	-.16	1.71	-.13	1.64
21	.21	1.76	.19	1.84	.01	2.47	.11	2.13	.12	2.09	.00	2.52
22	.05	1.94	.06	1.91	.06	1.93	.44	.67	-.05	2.27	.14	1.66
23	.13	1.46	.04	1.71	-.18	2.32	.04	1.73	-.09	2.08	-.00	1.84
24	-.03	2.14	-.01	2.07	.18	1.52	.09	1.80	.11	1.73	-.03	2.13
25	-.01	1.86	-.20	2.42	.02	1.78	-.06	2.02	-.15	2.26	-.13	2.21

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	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.03	1.73	.22	1.20	-.04	1.96	-.06	2.01	-.01	1.86	-.33	2.79
2	.05	1.92	.18	1.50	.12	1.70	-.04	2.19	.01	2.04	-.01	2.10
3	.11	1.43	.13	1.38	-.08	1.92	.10	1.45	-.16	2.13	-.03	1.81
4	.02	1.97	.10	1.73	.09	1.76	.14	1.60	.06	1.85	-.09	2.29
5	.14	1.89	.09	2.05	.13	1.94	-.05	2.56	.14	1.88	.21	1.64
6	.05	1.71	-.16	2.27	-.16	2.26	-.08	2.05	-.05	1.98	.08	1.64
7	.26	1.72	.22	1.86	.15	2.10	.20	1.93	-.03	2.67	.21	1.89
8	.08	1.64	.03	1.77	.03	1.76	.02	1.77	.00	1.83	-.22	2.38
9	.15	1.67	-.02	2.20	.14	1.72	.32	1.16	-.02	2.19	.08	1.89
10	.02	1.89	.21	1.37	.09	1.71	.02	1.87	.06	1.78	.01	1.90
11	.15	1.67	-.08	2.29	.06	1.90	-.00	2.09	.08	1.86	-.00	2.09
12	.00	1.65	-.10	1.89	-.10	1.89	.03	1.58	-.26	2.25	-.15	2.01
13	.06	2.03	.00	2.20	.20	1.62	.20	1.62	-.01	2.23	.06	2.02
14	.06	1.84	-.01	2.02	.02	1.96	-.02	2.06	-.17	2.50	-.23	2.69
15	.15	1.66	.00	2.10	.12	1.76	.02	2.05	-.04	2.24	.07	1.91
16	.11	1.67	.05	1.82	-.02	2.03	-.05	2.10	-.02	2.02	-.05	2.11
17	.05	1.98	.13	1.73	-.06	2.37	.03	2.06	.08	1.88	.07	1.92
18	.20	1.68	-.01	2.37	.12	1.96	.16	1.83	.15	1.85	.20	1.70
19	.05	1.62	.14	1.37	.01	1.73	-.06	1.95	-.21	2.36	.03	1.68
20	-.21	1.82	-.13	1.64	-.18	1.74	.09	1.14	-.40	2.25	-.28	1.98
21	.32	1.37	.30	1.45	.12	2.10	.22	1.74	.35	1.28	.20	1.80
22	.01	2.08	-.02	2.17	-.00	2.12	-.06	2.31	.04	1.99	.08	1.86
23	-.07	2.02	.01	1.81	.03	1.74	-.13	2.18	-.00	1.85	-.02	1.89
24	-.03	2.13	.09	1.78	-.05	2.19	.08	1.81	-.04	2.15	.08	1.80
25	-.07	2.05	.03	1.76	.04	1.72	.07	1.65	.00	1.83	-.05	1.99

Complement means:

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	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.08	.04	-.12	-.03	.03	.01	-.03	.04	-.11	.03	-.09	-.07
2	.04	.14	-.01	.10	-.03	.07	.01	.10	.07	.07	-.02	.00
3	-.06	.04	-.01	-.11	-.10	-.02	.03	.05	.04	.06	-.04	-.16
4	-.01	.05	.00	.07	-.02	-.05	-.02	-.01	.01	.10	.02	.09
5	.03	.14	.20	.14	.04	.05	.07	.03	-.01	.09	.14	.11
6	-.03	-.08	.02	-.09	.08	-.02	.01	-.02	-.10	-.07	.02	-.07
7	.21	.14	.23	.07	-.04	-.05	.13	-.02	.24	.19	.10	.09
8	-.13	-.01	-.10	.02	-.08	-.04	.03	.02	-.06	.03	-.13	.00
9	.06	.13	.10	.07	-.02	.01	.05	.04	.08	.12	.06	.04
10	-.08	.09	-.01	.07	.00	-.05	.03	-.05	-.08	.13	-.04	.11
11	.00	.00	.06	.06	.08	-.05	.07	.05	-.08	.06	-.01	.01
12	-.15	-.01	-.12	-.11	.00	.06	-.06	.06	-.15	-.08	-.07	-.17
13	-.02	.08	.07	.06	.00	.09	.06	-.07	-.02	-.01	.01	.13
14	.14	.01	-.03	-.12	.05	.00	.04	-.04	.09	.01	-.07	-.08
15	.00	-.02	.07	.02	.01	.00	.02	-.01	-.01	-.02	.05	.03
16	.05	.00	-.01	-.01	-.02	.03	.08	-.02	.07	-.03	-.09	.01
17	.08	.06	.03	.03	.08	.02	-.01	.07	.01	.04	.04	-.04
18	.04	.05	.12	.14	-.03	-.04	.07	-.02	.08	.09	.05	.16
19	.01	.04	-.04	-.08	.10	.00	-.04	-.01	-.09	.04	.00	-.08
20	-.21	-.11	-.23	-.25	-.04	.05	-.09	.01	-.17	-.16	-.14	-.25
21	.03	.18	.12	.13	.02	.06	.08	-.11	.01	.12	.04	.24
22	.22	-.01	.05	.00	.08	.08	.03	.01	.13	-.09	.02	-.01
23	.03	.00	-.09	-.02	.09	.03	-.02	.06	-.07	-.03	-.07	-.08
24	.02	.05	.08	.01	.04	-.02	.11	-.04	-.03	.07	-.03	.05
25	-.13	.03	-.04	-.03	-.01	-.01	.00	-.01	-.12	.03	-.04	-.02
mean:	.00	.04	.01	.01	.01	.01	.03	.00	-.01	.03	-.01	.00
SD:	.10	.07	.10	.09	.05	.04	.05	.05	.09	.08	.07	.11
mean absolute error:									.08	.07	.06	.08
SD:									.06	.05	.04	.07

Taxon means:

A6-25-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	2.07	1.70	2.19	1.92	2.03	2.09	1.96	2.10	.04	-.38	.22	-.18
2	1.94	1.64	2.08	1.75	2.07	1.99	2.00	1.90	-.13	-.35	.08	-.15
3	1.87	1.62	1.76	2.02	1.93	2.11	1.83	2.06	-.06	-.49	-.07	-.04
4	2.04	1.86	2.03	1.80	2.13	2.01	2.07	1.93	-.09	-.14	-.04	-.12
5	2.29	1.89	1.67	1.88	2.08	1.99	1.90	2.05	.21	-.10	-.24	-.16
6	1.91	2.07	1.79	2.10	2.03	2.02	2.02	1.98	-.12	.04	-.23	.12
7	1.90	2.10	1.81	2.34	1.91	2.08	2.04	2.13	-.01	.03	-.23	.20
8	2.16	1.86	2.09	1.78	2.07	1.97	2.02	1.88	.09	-.11	.07	-.10
9	1.94	1.74	1.82	1.91	1.98	2.00	1.98	2.02	-.04	-.26	-.16	-.11
10	2.15	1.71	1.95	1.75	1.91	1.97	2.01	1.94	.24	-.27	-.06	-.19
11	2.09	2.07	1.91	1.91	2.23	1.96	2.00	1.99	-.14	.11	-.09	-.08
12	2.00	1.69	1.94	1.92	2.00	2.04	2.16	2.04	.01	-.35	-.22	-.12
13	2.26	1.97	1.99	2.04	2.00	2.04	2.05	1.97	.25	-.07	-.06	.07
14	1.58	1.97	2.08	2.36	1.86	1.96	1.90	2.08	-.28	.01	.18	.27
15	2.12	2.16	1.91	2.06	2.02	2.10	2.04	2.18	.09	.06	-.13	-.12
16	1.82	1.98	2.01	2.00	1.99	1.95	1.85	1.92	-.17	.03	.15	.07
17	1.87	1.97	2.06	2.05	2.03	2.15	2.00	2.12	-.16	-.18	.06	-.07
18	2.20	2.17	1.95	1.88	1.96	1.99	1.99	1.85	.25	.18	-.04	.03
19	1.74	1.65	1.88	2.02	1.89	1.94	1.95	2.02	-.15	-.29	-.07	-.01
20	1.82	1.59	1.85	1.90	1.95	1.99	1.92	2.01	-.14	-.41	-.06	-.11
21	1.96	1.55	1.73	1.69	2.07	1.98	1.97	1.91	-.11	-.44	-.24	-.21
22	1.41	2.14	1.95	2.12	1.93	2.27	1.90	1.96	-.52	-.13	.06	.17
23	1.76	1.82	2.07	1.89	2.00	1.95	2.02	2.05	-.24	-.13	.05	-.15
24	2.00	1.91	1.82	2.03	2.03	2.01	1.80	2.00	-.03	-.10	.03	.03
25	2.21	1.76	1.94	1.94	2.10	1.97	1.89	2.08	.11	-.22	.05	-.14
mean:	1.96	1.86	1.93	1.96	2.01	2.02	1.97	2.01	-.04	-.16	-.04	-.04
SD:	.21	.19	.13	.16	.08	.07	.08	.08	.18	.18	.13	.13
mean absolute error:									.15	.20	.12	.12
SD:									.11	.14	.07	.06

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

A3-10-20

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.06	1.33	-.06	1.32	-.25	2.17	-.27	2.27	.08	.67	-.02	1.14
2	.30	-1.10	.08	2.74	.17	1.20	.17	1.17	.04	3.45	.15	1.57
3	-.01	2.56	-.02	2.67	.17	.30	.28	-1.23	.03	2.07	.09	1.32
4	.01	1.54	-.14	2.31	.05	1.37	-.09	2.08	.03	1.48	.08	1.22
5	.12	.89	.14	.70	.15	.66	-.01	1.79	-.19	3.00	-.06	2.11
6	.03	1.11	-.11	1.89	.09	.80	.17	.33	-.06	1.64	-.11	1.92
7	.07	1.46	.09	1.11	-.10	3.55	-.09	3.43	.13	.72	.20	-.25
8	.07	1.58	.07	1.53	.20	.00	-.06	3.12	-.03	2.81	-.10	3.68
9	-.18	2.48	.04	.82	.03	.90	-.16	2.29	-.03	1.33	-.21	2.69
10	-.13	1.32	-.19	1.50	-.25	1.71	-.19	1.50	.05	.76	-.06	1.10
11	.03	1.44	-.02	1.74	-.04	1.86	.18	.55	-.14	2.43	.05	1.33
12	.14	.51	.16	.31	.12	.68	.12	.67	.00	1.68	.05	1.25
13	.14	1.31	.17	.84	.12	1.51	.05	2.53	.22	.08	.06	2.43
14	.12	2.31	.17	1.36	.08	3.13	.28	-.70	.24	.08	.27	-.43
15	-.07	3.90	.01	2.87	.16	.97	.15	1.11	.21	.27	.08	2.02
16	-.22	1.47	-.23	1.50	-.09	1.03	-.02	.75	-.07	.93	.09	.39
17	-.01	2.21	.03	1.77	-.01	2.14	.11	.93	.09	1.17	.04	1.70
18	.07	1.68	.17	.35	-.08	3.80	-.03	3.10	.12	1.02	.20	-.13
19	-.09	1.44	-.12	1.58	.00	1.10	-.08	1.41	.09	.79	-.08	1.44
20	-.28	2.06	-.24	1.86	-.09	1.00	-.13	1.24	-.09	.99	-.15	1.35
21	-.03	3.33	.08	2.28	.17	1.56	.12	1.98	.32	.25	.16	1.65
22	.02	2.08	.02	2.05	.13	1.22	.15	1.07	.07	1.66	.04	1.86
23	.14	2.32	.23	-3.20	.07	6.66	.20	-1.05	.07	6.37	.34	-9.91
24	.32	1.66	.25	-.48	.10	-5.25	.44	5.67	.08	-5.81	.18	-2.74
25	.16	1.94	.07	4.31	.28	-1.19	.04	5.22	-.07	8.09	.15	2.20

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	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.28	2.29	-.06	1.30	-.15	1.70	-.20	1.92	-.13	1.62	-.15	1.70
2	.22	.30	.04	3.49	.13	1.80	.04	3.47	.20	.66	.22	.27
3	.12	.92	.07	1.54	-.04	2.95	.21	-.29	-.03	2.87	.02	2.20
4	-.20	2.64	-.00	1.63	.01	1.55	.12	1.02	.09	1.14	-.10	2.10
5	.02	1.55	-.09	2.32	.04	1.45	.02	1.57	.11	.95	.01	1.61
6	-.04	1.51	-.07	1.72	-.07	1.67	-.13	2.03	-.07	1.71	.05	1.00
7	.06	1.48	.19	-.15	.07	1.44	-.11	3.63	.05	1.70	.18	.07
8	.10	1.22	.17	.43	.03	2.03	.03	2.03	.01	2.26	.18	.20
9	.18	-.22	.11	.32	-.10	1.87	-.14	2.13	-.03	1.35	-.11	1.91
10	-.05	1.06	-.03	1.00	-.21	1.57	-.06	1.11	-.10	1.23	-.16	1.43
11	.01	1.55	.05	1.28	.02	1.47	-.05	1.89	.00	1.59	.12	.89
12	-.14	2.86	-.28	4.02	.03	1.42	-.02	1.87	-.17	3.13	-.10	2.53
13	.10	1.85	.08	2.13	.05	2.58	-.11	4.81	.21	.32	.20	.40
14	.08	3.15	.15	1.83	.19	.92	.11	2.49	.08	3.14	.15	1.72
15	-.14	4.73	.12	1.47	.26	-.33	.12	1.42	.15	1.12	.12	1.43
16	-.09	1.02	-.19	1.37	-.11	1.09	-.06	.90	-.20	1.41	-.16	1.26
17	-.01	2.15	.11	.96	.13	.81	-.03	2.38	.23	-.28	-.08	2.87
18	.03	2.31	-.02	3.08	.15	.63	.04	2.12	.05	2.03	.18	.12
19	.07	.86	-.06	1.35	-.03	1.22	-.07	1.38	-.17	1.77	-.21	1.92
20	-.11	1.13	-.05	.80	-.30	2.21	-.04	.75	-.00	.52	.00	.50
21	.27	.67	-.12	4.13	.30	.41	.28	.60	.16	1.62	.18	1.40
22	.28	.04	.04	1.86	.00	2.18	.03	1.98	.05	1.83	-.12	3.08
23	.02	9.79	.15	1.54	.17	.34	-.02	11.85	-.20	22.90	.08	6.21
24	.24	-.93	.27	.01	.17	-3.08	.31	1.51	.50	7.60	.33	2.04
25	.28	-1.18	.34	-2.93	.18	1.34	.28	-1.15	.05	4.88	.16	2.02

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Complement means:

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.12	-.11	-.22	-.06	-.06	.05	-.02	-.07	-.06	-.16	-.20	.01
2	.13	.13	.20	.12	.01	.02	.04	.05	.13	.11	.16	.07
3	.12	.09	.10	-.01	.04	-.05	-.02	.00	.08	.14	.12	-.02
4	-.05	.04	-.09	.04	-.02	-.01	.05	-.06	-.03	.05	-.13	.10
5	.02	.02	.06	-.01	.08	.03	-.01	-.15	-.06	-.01	.07	.13
6	-.06	-.13	-.02	-.12	-.02	.02	.00	.04	-.05	-.14	-.02	-.16
7	.07	.05	.05	.08	.04	-.07	-.03	.13	.03	.12	.07	-.05
8	-.03	.09	.16	.01	-.03	-.06	.00	.03	.00	.15	.16	-.02
9	-.16	-.12	-.01	-.10	.04	.00	-.07	.02	-.20	-.12	.06	-.12
10	-.14	-.07	-.16	-.09	-.11	-.08	.02	.05	-.04	.00	-.17	-.14
11	.07	.01	.03	-.04	.08	.06	.00	.00	-.01	-.05	.03	-.03
12	.11	-.05	-.04	-.05	-.01	.00	-.02	-.08	.12	-.05	-.02	.04
13	.09	.03	.14	.16	.02	-.09	.00	-.04	.08	.13	.14	.20
14	.24	.13	.10	.17	-.06	.13	.06	.03	.30	-.01	.04	.14
15	.08	.06	.05	.21	.03	.08	.02	.07	.05	-.02	.03	.14
16	-.08	-.19	-.14	-.15	.06	.02	-.04	.14	-.14	-.20	-.10	-.30
17	.06	.02	-.03	.15	.09	-.06	-.02	.06	-.03	.08	-.01	.09
18	.12	.03	.05	.11	.01	-.06	-.02	.06	.10	.09	.07	.05
19	-.09	-.07	-.05	-.04	.06	.01	.05	-.03	-.15	-.08	-.09	-.01
20	-.22	-.17	-.11	-.17	.06	.02	-.10	-.10	-.28	-.19	-.01	-.08
21	.12	.04	.21	.26	.00	.01	.14	-.04	.12	.03	.06	.30
22	.07	.03	.10	.04	.02	.06	.04	.12	.05	-.03	.06	-.08
23	.26	.09	.05	.02	-.01	.10	-.02	.02	.27	-.01	.08	.00
24	.29	.30	.22	.25	-.01	-.02	.07	-.06	.31	.32	.15	.31
25	.09	.26	.24	.06	.01	-.09	.01	-.02	.08	.35	.23	.08
mean:	.04	.02	.04	.03	.01	.00	.01	.01	.03	.02	.03	.03
SD:	.13	.12	.12	.12	.05	.06	.05	.07	.14	.14	.11	.14
					mean absolute error:				.11	.11	.09	.11
								SD:	.09	.09	.06	.09

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Taxon means:

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.58	1.52	2.05	1.33	1.91	2.39	2.04	2.05	-.33	-.87	.01	-.72
2	1.82	1.95	.59	1.97	1.73	2.19	1.89	1.93	.09	-.24	-1.30	.05
3	.92	1.27	1.14	2.63	1.96	2.26	1.91	1.99	-1.04	-.99	-.77	.63
4	1.87	1.40	2.03	1.39	2.29	1.86	2.21	1.92	-.42	-.47	-.18	-.54
5	1.53	1.59	1.27	1.80	1.96	2.06	2.22	1.79	-.42	-.46	-.95	.01
6	1.19	1.44	1.02	1.41	2.01	2.32	1.95	2.15	-.83	-.88	-.93	-.74
7	1.43	1.65	1.70	1.28	2.11	1.85	1.94	1.58	-.68	-.20	-.24	-.30
8	2.78	1.34	.48	2.37	2.14	2.06	1.82	2.23	.64	-.71	-1.35	.14
9	1.57	1.39	.86	1.28	2.09	2.45	1.99	2.00	-.52	-1.06	-1.14	-.72
10	1.37	1.14	1.40	1.19	1.94	2.15	2.01	1.70	-.58	-1.01	-.61	-.52
11	1.21	1.54	1.43	1.83	1.82	1.99	2.31	2.34	-.62	-.45	-.88	-.51
12	.74	2.13	2.02	2.08	1.64	2.14	2.00	2.10	-.90	-.01	.02	-.02
13	1.94	2.75	1.25	.99	2.08	2.26	2.14	2.07	-.15	.49	-.89	-1.08
14	.08	2.21	2.67	1.38	1.95	2.10	1.75	1.94	-1.88	.11	.91	-.56
15	2.00	2.26	2.38	.36	2.12	2.19	2.02	1.77	-.13	.08	.36	-1.42
16	.85	1.18	1.03	1.08	1.98	2.12	1.91	1.76	-1.13	-.93	-.88	-.68
17	1.47	1.85	2.39	.56	1.91	1.86	2.05	1.99	-.45	-.01	.34	-1.42
18	1.10	2.29	2.08	1.23	1.69	2.14	2.02	2.12	-.58	.15	.05	-.90
19	1.47	1.39	1.29	1.26	2.07	1.83	1.94	1.93	-.60	-.44	-.65	-.67
20	1.25	1.06	.82	1.07	2.07	2.07	1.69	2.00	-.82	-1.01	-.87	-.93
21	1.97	2.68	1.21	.76	2.21	2.21	1.82	1.95	-.23	.47	-.60	-1.19
22	1.66	1.97	1.44	1.89	1.88	2.17	2.17	2.01	-.22	-.19	-.73	-.12
23	-4.72	5.24	7.55	9.87	2.04	1.83	1.96	2.03	-6.75	3.41	5.59	7.84
24	.82	1.06	-1.38	-.43	1.62	2.20	2.07	1.98	-.81	-1.14	-3.45	-2.41
25	3.91	-.71	-.12	4.77	2.05	2.13	2.17	1.77	1.87	-2.84	-2.29	3.00
mean:	1.27	1.74	1.54	1.81	1.97	2.11	2.00	1.96	-.70	-.37	-.46	-.15
SD:	1.41	.97	1.49	1.88	.17	.17	.15	.17	1.40	1.02	1.50	1.88
					mean absolute error:				.91	.74	1.04	1.08
								SD:	1.27	.79	1.17	1.54

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

A6-10-20

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.01	4.54	.02	4.02	.14	1.89	.10	2.62	.10	2.58	.21	.63
2	.10	1.45	.05	1.80	-.10	2.86	-.13	3.05	-.14	3.10	-.16	3.26
3	-.13	2.48	-.06	1.96	.06	1.07	-.05	1.87	.05	1.14	.11	.73
4	.23	-.27	-.15	2.14	-.03	1.35	.09	.61	-.36	3.44	-.16	2.20
5	-.25	2.58	-.15	2.02	-.05	1.43	.07	.79	-.23	2.45	-.29	2.76
6	-.12	3.71	-.05	3.16	.10	1.89	.15	1.50	.19	1.15	.34	-.05
7	-.11	2.74	.23	.10	.02	1.77	-.05	2.32	.01	1.84	-.14	2.97
8	-.07	2.09	.01	1.50	.09	.96	-.01	1.62	-.06	1.97	-.05	1.91
9	.01	2.41	-.04	2.87	.09	1.76	.13	1.42	.13	1.40	-.17	4.03
10	.14	.79	-.13	2.46	.05	1.33	.04	1.38	.01	1.59	.07	1.19
11	-.09	2.46	-.06	2.24	-.14	2.84	-.09	2.49	.10	1.16	.11	1.09
12	.24	-.04	-.16	2.51	.03	1.28	-.11	2.20	-.37	3.84	-.02	1.60
13	.09	1.32	-.00	2.01	.03	1.76	-.12	2.89	.10	1.17	.14	.89
14	.21	1.10	.14	1.86	.21	1.11	-.00	3.36	.06	2.72	.01	3.27
15	.16	.50	.08	1.43	.03	2.02	.05	1.80	.00	2.28	.22	-.05
16	.00	1.49	-.06	2.08	-.02	1.67	.03	1.27	-.10	2.41	-.15	2.96
17	-.06	1.04	-.27	2.21	-.36	2.70	-.49	3.37	-.06	1.09	-.08	1.18
18	-.02	2.02	.10	1.09	-.01	1.95	.13	.87	.03	1.63	-.02	2.04
19	.06	1.28	-.19	3.07	-.03	1.92	-.21	3.19	.04	1.42	.20	.21
20	.07	2.74	-.08	4.85	-.05	4.42	-.16	6.00	.13	1.77	.20	.82
21	-.09	2.29	.00	1.72	-.00	1.78	.15	.84	.00	1.75	-.02	1.88
22	.07	1.25	.09	1.08	.13	.75	-.08	2.58	-.20	3.60	-.03	2.10
23	-.01	1.43	-.03	1.53	-.08	1.80	-.05	1.64	-.04	1.59	.16	.47
24	-.12	1.43	-.10	1.33	-.24	1.99	-.23	1.95	-.15	1.58	-.16	1.59
25	-.01	2.15	.06	1.48	-.20	3.95	.07	1.38	.12	.88	.13	.88

A6-10-20

	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.27	-.50	.16	1.49	.19	.91	.01	4.18	.21	.49	.22	.41
2	.22	.63	.13	1.23	.05	1.81	.20	.75	.15	1.08	.04	1.90
3	.05	1.17	.01	1.49	-.08	2.14	-.16	2.76	-.19	2.96	-.01	1.60
4	-.25	2.73	-.13	1.97	-.11	1.89	-.00	1.17	-.06	1.55	-.11	1.86
5	-.06	1.52	-.03	1.33	-.20	2.27	-.13	1.90	-.02	1.25	-.17	2.10
6	.13	1.66	.21	1.02	.05	2.33	.16	1.44	.23	.80	.11	1.79
7	.07	1.35	-.02	2.10	.05	1.49	.15	.75	.02	1.76	.06	1.46
8	-.09	2.18	-.01	1.62	-.06	2.00	.02	1.45	.01	1.50	.02	1.43
9	.06	2.01	.16	1.13	.06	2.03	.15	1.23	.20	.80	.08	1.82
10	.11	.94	.07	1.21	-.14	2.51	.02	1.51	-.07	2.09	-.03	1.84
11	.14	.86	.05	1.47	.06	1.45	.15	.74	.05	1.49	.05	1.51
12	.14	.59	-.02	1.59	.04	1.22	.01	1.40	-.13	2.32	-.28	3.23
13	.08	1.36	.08	1.33	.02	1.79	.06	1.48	.14	.88	.05	1.59
14	.32	-.08	.16	1.58	.14	1.86	.17	1.53	.00	3.33	-.01	3.49
15	.09	1.32	-.00	2.31	-.06	2.94	.05	1.73	.24	-.37	.15	.69
16	.19	-.30	.00	1.50	.02	1.32	-.06	2.13	-.04	1.85	-.01	1.58
17	-.03	.91	-.17	1.67	-.27	2.17	-.26	2.15	-.09	1.25	.02	.63
18	-.01	1.91	-.05	2.23	.02	1.73	.03	1.59	-.13	2.92	.07	1.35
19	-.10	2.44	-.09	2.36	.13	.75	.05	1.30	-.06	2.14	-.06	2.12
20	.27	-.11	.14	1.63	.36	-1.40	.19	1.03	.10	2.23	.02	3.36
21	-.05	2.07	-.04	2.01	.01	1.68	.05	1.44	.08	1.27	.06	1.38
22	-.08	2.52	.05	1.40	-.17	3.29	.05	1.40	-.08	2.52	.06	1.38
23	-.24	2.70	-.31	3.10	.05	1.09	.02	1.29	-.08	1.86	-.09	1.87
24	-.08	1.27	-.11	1.37	-.19	1.76	-.18	1.69	-.11	1.38	-.23	1.92
25	.06	1.49	.04	1.71	.04	1.73	.03	1.79	-.01	2.21	.20	.17

Complement means:

A6-10-20

sample	Pooled estimates				True means				Algebraic error			
	x	y	z	v	x	y	z	v	x	y	z	v
1	.11	.05	.21	.17	.04	.03	.02	-.03	.06	.02	.19	.20
2	-.08	.14	.05	.02	-.07	.03	.07	.01	-.01	.11	-.02	.01
3	-.06	-.17	-.03	-.14	.03	.02	-.01	.00	-.09	-.18	-.02	-.14
4	-.08	.03	-.13	-.18	.02	.03	-.05	.01	-.09	.00	-.08	-.19
5	-.12	-.14	-.09	-.15	-.02	-.01	-.04	.00	-.10	-.13	-.05	-.15
6	.14	.08	.12	.16	.01	.01	.09	.01	.13	.07	.03	.15
7	.02	.01	.05	.03	-.02	.02	.02	-.02	.04	-.02	.03	.05
8	-.01	-.02	.01	-.04	.03	-.03	.01	.05	-.04	.01	.00	-.08
9	-.03	.11	.08	.13	-.04	.00	.06	.00	.02	.10	.01	.12
10	-.01	.07	.04	-.07	.05	.02	.02	.02	-.06	.05	.02	-.09
11	-.01	.04	.01	.07	.00	-.02	.04	.07	-.02	.06	-.03	.00
12	-.10	.08	-.04	-.15	-.05	.06	.02	.06	-.05	.02	-.05	-.22
13	.01	.08	.05	.09	-.01	.05	.01	.02	.02	.03	.04	.07
14	.05	.18	.17	.06	-.03	-.01	.08	-.01	.08	.19	.09	.07
15	.11	.07	.09	.06	.00	-.07	.02	.03	.11	.14	.07	.03
16	-.06	-.02	.06	-.04	.01	.05	-.03	-.05	-.07	-.07	.09	.01
17	-.36	-.23	-.19	-.21	-.06	.01	-.07	.12	-.30	-.24	-.12	-.33
18	.07	-.01	.02	-.03	-.01	.02	.00	.04	.08	-.03	.01	-.07
19	-.06	.01	-.06	.03	.05	-.05	.00	.04	-.11	.06	-.07	.00
20	-.02	.13	.08	.20	-.02	.02	.04	-.02	.00	.11	.04	.22
21	.04	-.03	.00	.03	-.02	.06	.04	.06	.06	-.09	-.04	-.03
22	-.01	.06	.04	-.15	-.02	.03	.00	.00	.02	.03	.03	-.15
23	.03	-.10	-.13	-.02	.03	.01	.02	-.03	.00	-.11	-.16	.01
24	-.16	-.13	-.18	-.15	.04	.08	-.03	-.04	-.20	-.21	-.15	-.11
25	.09	.02	.02	.05	.01	.01	.01	-.01	.07	.01	.01	.06
mean:	-.02	.01	.01	-.01	.00	.01	.01	.01	-.02	.00	-.01	-.02
SD:	.10	.10	.10	.11	.03	.03	.04	.04	.10	.11	.08	.13
mean absolute error:									.07	.08	.06	.10
SD:									.06	.07	.05	.08

Taxon means:

A6-10-20

sample	Pooled estimates				True means				Algebraic error			
	x	y	z	v	x	y	z	v	x	y	z	v
1	2.42	3.40	.60	1.33	2.09	2.02	2.13	1.94	.33	1.39	-1.53	-.62
2	2.70	1.15	1.79	2.00	1.96	2.26	2.05	2.14	.75	-1.12	-.25	-.14
3	1.34	1.84	1.20	1.72	1.99	2.21	1.91	2.05	-.65	-.38	-.71	-.34
4	1.65	.96	1.98	2.29	2.06	2.10	2.00	2.01	-.41	-1.14	-.02	.28
5	1.86	1.94	1.68	1.99	1.87	2.13	2.15	1.97	-.01	-.19	-.46	.02
6	1.54	2.06	1.78	1.43	2.03	1.86	2.18	1.49	-.49	.20	-.40	-.06
7	1.80	1.86	1.53	1.70	1.79	1.80	1.97	1.92	.00	.07	-.44	-.22
8	1.67	1.72	1.52	1.82	1.96	2.16	1.94	1.88	-.29	-.44	-.42	-.05
9	2.77	1.59	1.87	1.41	2.10	1.94	2.01	2.04	.67	-.35	-.14	-.63
10	1.68	1.17	1.37	2.06	2.09	1.75	2.06	1.95	-.41	-.58	-.69	.11
11	1.94	1.56	1.74	1.37	1.99	1.86	1.91	2.10	-.05	-.31	-.18	-.74
12	2.10	.98	1.70	2.46	1.96	1.96	1.88	2.24	.14	-.98	-.17	.22
13	1.93	1.38	1.57	1.28	1.93	2.16	2.16	1.98	.00	-.78	-.59	-.70
14	2.83	1.40	1.51	2.64	2.12	1.86	2.16	2.22	.71	-.45	-.65	.42
15	1.06	1.51	1.34	1.61	1.69	1.98	1.79	2.02	-.63	-.47	-.44	-.41
16	2.11	1.70	.98	1.86	1.95	2.16	1.73	2.18	.15	-.46	-.75	-.32
17	1.88	1.40	1.25	1.33	2.14	2.00	1.79	2.18	-.26	-.60	-.54	-.85
18	1.33	1.95	1.74	2.09	1.97	1.75	2.07	2.08	-.64	.20	-.34	.01
19	2.15	1.65	2.16	1.44	2.03	1.90	2.01	2.01	.13	-.25	.15	-.57
20	3.89	1.80	2.56	.87	2.22	2.17	2.02	1.93	1.67	-.37	.53	-1.06
21	1.48	1.92	1.74	1.57	2.04	2.14	2.03	2.10	-.56	-.23	-.28	-.53
22	1.92	1.35	1.55	3.13	2.03	2.11	1.92	2.38	-.11	-.76	-.37	.76
23	1.21	1.94	2.12	1.51	2.09	2.16	1.88	1.83	-.88	-.22	.24	-.32
24	1.62	1.50	1.73	1.58	2.02	2.10	1.91	2.14	-.40	-.61	-.18	-.57
25	1.25	1.89	1.87	1.61	1.98	2.02	1.89	1.98	-.73	-.13	-.02	-.38
mean:	1.93	1.66	1.64	1.76	2.00	2.02	1.98	2.03	-.08	-.36	-.35	-.27
SD:	.61	.47	.39	.48	.11	.15	.12	.17	.57	.49	.39	.42
mean absolute error:									.44	.51	.42	.41
SD:									.36	.34	.31	.28

A3-50-15

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

```
          ----------------------------- output/input --------------------------------
            y/x            x/y           z/x             x/z            v/x             x/v
sample  comp   tax     comp   tax     comp   tax     comp   tax     comp   tax     comp   tax

  1      .20  1.28      .05  1.44    -.04  1.53      .10  1.38      .17  1.32      .07  1.42
  2      .05  1.43      .13  1.36     .01  1.47      .10  1.39      .13  1.36     -.11  1.58
  3      .00  1.54      .06  1.48     .18  1.36      .05  1.49     -.13  1.68     -.09  1.64
  4      .01  1.30      .08  1.24    -.01  1.32     -.09  1.40     -.13  1.44     -.17  1.48
  5      .08  1.43     -.19  1.70     .18  1.34      .23  1.28      .33  1.19      .08  1.43
  6      .10  1.61      .05  1.68     .01  1.73      .15  1.56      .03  1.70     -.02  1.77
  7      .01  1.63      .03  1.61     .14  1.49      .00  1.64      .34  1.27     -.13  1.79
  8      .14  1.39      .22  1.32     .43  1.12      .26  1.27     -.25  1.77     -.06  1.59
  9      .06  1.47     -.08  1.61     .24  1.27      .31  1.21      .06  1.47     -.02  1.54
 10      .18  1.53      .31  1.37     .11  1.62      .14  1.58      .06  1.68      .01  1.75
 11      .18  1.37     -.02  1.55     .18  1.37      .23  1.33      .08  1.46     -.07  1.60
 12     -.10  1.58      .07  1.41     .21  1.26      .20  1.27      .01  1.47      .09  1.39
 13      .02  1.27     -.17  1.42    -.32  1.53     -.22  1.45     -.00  1.29     -.07  1.34
 14     -.03  1.54      .03  1.49    -.13  1.63      .12  1.41      .20  1.33      .24  1.29
 15      .07  1.67      .24  1.48     .13  1.60      .71   .95      .02  1.73      .17  1.55
 16      .20  1.41      .22  1.39     .28  1.34      .41  1.21      .08  1.53      .15  1.46
 17     -.31  1.51     -.25  1.46     .07  1.17     -.02  1.25     -.30  1.50     -.14  1.36
 18      .29  1.36     -.01  1.64     .29  1.37      .42  1.25      .02  1.62     -.12  1.75
 19     -.01  1.44     -.03  1.46     .01  1.43     -.26  1.66      .01  1.42     -.14  1.56
 20      .08  1.48      .07  1.49    -.19  1.79     -.23  1.84      .11  1.44     -.13  1.72
 21      .04  1.43     -.11  1.59    -.03  1.51      .11  1.35     -.08  1.56     -.16  1.64
 22      .07  1.32      .05  1.34    -.04  1.42      .07  1.32      .45   .98      .20  1.20
 23     -.34  1.49     -.58  1.68     .15  1.11     -.19  1.37     -.22  1.40     -.35  1.50
 24     -.21  1.51      .14  1.24     .05  1.31      .02  1.34     -.08  1.41     -.31  1.59
 25     -.07  1.73     -.09  1.76    -.08  1.74     -.09  1.76      .12  1.50      .22  1.38
```

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```
          ----------------------------- output/input --------------------------------
            z/y            y/z           v/y             y/v            v/z             z/v
sample  comp   tax     comp   tax     comp   tax     comp   tax     comp   tax     comp   tax

  1     -.13  1.62      .20  1.28    -.05  1.54      .20  1.29     -.11  1.60     -.24  1.74
  2      .21  1.29      .08  1.41    -.07  1.54      .09  1.39     -.07  1.55     -.03  1.51
  3      .12  1.42     -.01  1.56     .12  1.42     -.04  1.59      .09  1.45      .26  1.28
  4     -.00  1.32     -.18  1.49     .07  1.25      .01  1.30     -.11  1.42     -.27  1.57
  5      .22  1.30      .30  1.21    -.03  1.55     -.01  1.52     -.11  1.62      .09  1.43
  6      .03  1.70      .01  1.73     .24  1.44     -.09  1.85     -.00  1.74      .08  1.64
  7     -.25  1.92     -.01  1.66    -.05  1.70     -.00  1.65     -.07  1.72      .21  1.41
  8     -.04  1.57      .23  1.31     .25  1.29     -.14  1.66      .09  1.44      .52  1.02
  9     -.22  1.75     -.28  1.82     .06  1.46     -.07  1.60     -.03  1.55      .03  1.49
 10      .25  1.44      .17  1.54     .17  1.55      .40  1.26      .24  1.46      .17  1.54
 11      .06  1.47      .35  1.22     .18  1.37      .11  1.43      .32  1.25      .21  1.34
 12      .18  1.29      .01  1.47     .25  1.22      .14  1.33     -.07  1.55     -.14  1.62
 13     -.04  1.32      .09  1.21     .06  1.23      .09  1.22     -.05  1.32     -.01  1.29
 14     -.01  1.52      .20  1.33     .08  1.44      .03  1.49      .08  1.44     -.20  1.70
 15      .20  1.52      .07  1.67     .35  1.36      .30  1.40      .26  1.46     -.33  2.12
 16      .33  1.29      .28  1.34     .22  1.40      .03  1.58      .02  1.58     -.07  1.66
 17     -.10  1.33      .16  1.09     .10  1.14      .04  1.20      .02  1.21     -.23  1.44
 18      .00  1.63      .47  1.20     .07  1.56      .13  1.51      .30  1.35      .14  1.50
 19      .07  1.37      .03  1.41     .23  1.24      .21  1.26      .10  1.35     -.27  1.66
 20      .12  1.43      .00  1.56     .03  1.53      .18  1.35      .07  1.49      .15  1.39
 21     -.21  1.70     -.54  2.07     .03  1.44     -.10  1.58      .21  1.24      .09  1.37
 22      .03  1.35     -.05  1.43     .00  1.38     -.01  1.39      .09  1.30     -.06  1.44
 23     -.26  1.43      .16  1.11    -.27  1.44     -.24  1.42     -.28  1.45     -.49  1.60
 24     -.13  1.45      .46   .99     .15  1.24     -.05  1.39      .25  1.16     -.05  1.39
 25     -.08  1.74      .08  1.55     .19  1.42      .36  1.21      .18  1.43      .22  1.39
```

Complement means:

A3-50-15

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	.07	.20	-.14	.00	-.03	.04	-.08	.02	.10	.16	-.06	-.02
2	.04	.07	.06	-.01	-.06	.02	-.04	.11	.10	.05	.11	-.12
3	.01	-.02	.19	.03	.01	-.14	.12	.07	-.01	.12	.07	-.05
4	-.06	-.05	-.09	-.06	.00	.06	-.03	-.10	-.06	-.11	-.06	.05
5	.04	.12	.16	.06	-.01	.00	.16	.03	.06	.13	.00	.03
6	.06	.01	.04	.09	.05	-.05	-.03	-.17	.01	.06	.07	.26
7	-.03	.00	.03	.07	-.12	.05	-.06	.00	.08	-.05	.10	.08
8	.14	.08	.30	.03	.03	.00	.13	.08	.11	.07	.17	-.05
9	.07	-.10	.02	.03	.20	-.02	.03	-.04	-.13	-.07	-.01	.07
10	.16	.25	.18	.16	-.11	-.04	.04	.13	.27	.29	.14	.02
11	.04	.21	.15	.19	-.02	.01	.03	-.03	.07	.20	.12	.22
12	.12	.02	.08	.06	.06	.06	-.13	-.07	.06	-.05	.21	.13
13	-.15	.07	-.12	.01	-.17	.18	.01	.04	.01	-.12	-.14	-.04
14	.13	.06	-.11	.12	-.07	.10	-.02	.16	.20	-.04	-.10	-.04
15	.37	.15	.00	.21	.03	-.11	-.04	-.03	.34	.26	.04	.23
16	.26	.17	.18	.10	.02	-.17	.07	.10	.24	.33	.11	.01
17	-.13	-.03	-.09	-.06	.01	.00	-.11	-.03	-.14	-.03	.03	-.03
18	.10	.30	.14	.13	.01	.15	.06	-.01	.09	.15	.08	.14
19	-.15	.08	-.06	.11	.03	.10	.04	.01	-.17	-.02	-.10	.11
20	-.10	.09	.03	.07	-.03	.19	-.04	.02	-.06	-.10	.07	.05
21	-.05	-.20	-.05	.05	.06	-.12	-.09	-.02	-.11	-.08	.03	.07
22	.11	.00	-.02	.18	.04	.03	.03	.01	.06	-.02	-.05	.18
23	-.37	-.14	-.20	-.26	-.06	-.02	-.11	-.08	-.31	-.12	-.09	-.18
24	-.05	.07	-.05	.10	.09	.03	-.11	-.05	-.14	.03	.06	.16
25	.01	.13	.02	.16	.12	-.07	.03	.01	-.10	.19	-.01	.15
mean:	.03	.06	.03	.06	.00	.01	-.01	.01	.02	.05	.03	.06
SD:	.14	.12	.12	.10	.08	.09	.08	.07	.15	.13	.09	.11
mean absolute error:									.12	.11	.08	.10
SD:									.09	.08	.05	.07

Taxon means:

A3-50-15

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.41	1.28	1.63	1.49	1.51	1.43	1.54	1.51	-.10	-.15	.09	-.02
2	1.44	1.41	1.42	1.48	1.36	1.58	1.57	1.52	.08	-.17	-.15	-.04
3	1.54	1.56	1.35	1.52	1.45	1.51	1.41	1.52	.09	.05	-.05	.00
4	1.37	1.36	1.40	1.37	1.42	1.51	1.37	1.41	-.05	-.14	.03	-.04
5	1.47	1.39	1.35	1.45	1.55	1.61	1.36	1.58	-.08	-.22	-.01	-.13
6	1.67	1.73	1.69	1.63	1.56	1.66	1.58	1.49	.10	.07	.10	.14
7	1.68	1.64	1.61	1.56	1.60	1.46	1.64	1.62	.08	.19	-.03	-.05
8	1.39	1.45	1.24	1.50	1.51	1.47	1.42	1.58	-.12	-.02	-.19	-.08
9	1.45	1.63	1.51	1.49	1.62	1.61	1.47	1.45	-.17	.01	.03	.05
10	1.56	1.44	1.54	1.56	1.44	1.45	1.52	1.64	.13	-.01	.01	-.08
11	1.49	1.34	1.39	1.36	1.49	1.45	1.58	1.48	.00	-.11	-.19	-.13
12	1.36	1.46	1.39	1.41	1.53	1.53	1.59	1.50	-.17	-.07	-.20	-.09
13	1.41	1.23	1.38	1.28	1.59	1.42	1.42	1.51	-.18	-.19	-.05	-.23
14	1.40	1.46	1.62	1.41	1.57	1.52	1.59	1.59	-.18	-.06	.03	-.18
15	1.33	1.58	1.74	1.51	1.47	1.52	1.68	1.48	-.14	.06	.06	.03
16	1.35	1.44	1.43	1.50	1.30	1.50	1.58	1.58	.06	-.06	-.15	-.08
17	1.36	1.26	1.31	1.29	1.44	1.57	1.41	1.59	-.09	-.30	-.10	-.31
18	1.55	1.36	1.50	1.51	1.55	1.43	1.63	1.43	-.01	-.07	-.13	.08
19	1.56	1.37	1.49	1.34	1.62	1.50	1.51	1.61	-.07	-.13	-.02	-.27
20	1.68	1.46	1.54	1.49	1.59	1.42	1.47	1.37	.09	.04	.06	.11
21	1.53	1.69	1.53	1.41	1.46	1.56	1.48	1.53	.06	.13	.04	-.12
22	1.29	1.38	1.40	1.22	1.46	1.43	1.42	1.47	-.18	-.05	-.02	-.25
23	1.52	1.34	1.38	1.43	1.66	1.47	1.50	1.43	-.15	-.13	-.12	.00
24	1.39	1.30	1.39	1.27	1.47	1.37	1.63	1.54	-.08	-.07	-.24	-.27
25	1.63	1.50	1.62	1.45	1.63	1.50	1.46	1.49	.00	.00	.16	-.04
mean:	1.47	1.44	1.47	1.44	1.51	1.50	1.51	1.52	-.04	-.06	-.04	-.08
SD:	.11	.13	.12	.10	.09	.07	.09	.07	.10	.11	.10	.12
mean absolute error:									.10	.10	.09	.11
SD:									.05	.07	.07	.09

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

A6-50-15

output/input

sample	y/x		x/y		z/x		x/z		v/x		x/v	
	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.17	1.67	-.11	1.62	.04	1.48	.01	1.51	.21	1.32	.03	1.49
2	.41	1.02	.23	1.16	-.36	1.62	.15	1.22	-.18	1.48	-.06	1.39
3	.21	1.46	.12	1.57	-.08	1.82	-.11	1.84	.08	1.62	.16	1.53
4	.55	1.04	.34	1.25	.08	1.51	.09	1.50	-.13	1.72	.20	1.39
5	-.00	1.48	-.54	2.04	.00	1.47	-.13	1.61	-.00	1.48	.16	1.30
6	-.14	1.66	.39	1.19	-.18	1.70	.06	1.49	-.15	1.68	-.02	1.56
7	.07	1.27	.04	1.30	.18	1.18	.06	1.28	.11	1.24	.19	1.17
8	.02	1.54	.20	1.37	.12	1.45	.11	1.46	.17	1.40	.25	1.32
9	-.26	1.61	.19	1.26	-.19	1.56	-.23	1.59	-.26	1.61	-.09	1.48
10	.25	1.12	.17	1.18	.02	1.31	-.24	1.53	.01	1.32	-.30	1.58
11	-.09	1.44	-.24	1.56	-.08	1.43	-.25	1.56	-.10	1.45	-.31	1.61
12	-.08	1.59	-.10	1.61	.02	1.49	.35	1.17	.17	1.35	.28	1.23
13	.24	1.33	.13	1.45	.28	1.29	.22	1.35	.12	1.46	.12	1.46
14	-.16	1.50	.05	1.29	-.19	1.53	-.07	1.41	-.25	1.59	-.16	1.50
15	.11	1.35	.08	1.38	-.11	1.54	-.10	1.52	-.28	1.68	.03	1.42
16	.11	1.29	.25	1.13	-.15	1.57	-.03	1.44	-.12	1.53	-.05	1.46
17	-.22	1.58	.01	1.40	-.38	1.71	-.14	1.52	-.14	1.52	-.02	1.42
18	.23	1.22	.06	1.36	-.07	1.48	-.05	1.47	-.03	1.45	-.01	1.43
19	.09	1.48	-.05	1.63	.06	1.51	.21	1.37	.05	1.52	-.14	1.72
20	-.02	1.37	-.07	1.41	-.26	1.58	.12	1.24	.18	1.18	-.04	1.38
21	-.07	1.43	-.12	1.47	-.13	1.48	-.04	1.40	-.11	1.46	-.02	1.39
22	-.25	1.53	-.21	1.50	-.10	1.40	-.04	1.35	.12	1.21	.03	1.29
23	.23	1.38	.10	1.51	-.08	1.69	.01	1.61	.20	1.42	.16	1.45
24	-.06	1.58	-.03	1.55	.04	1.49	.08	1.45	.10	1.43	.00	1.52
25	.24	1.36	.16	1.43	.32	1.29	.28	1.32	-.08	1.66	.04	1.54

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output/input

sample	z/y		y/z		v/y		y/v		v/z		z/v	
	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	.30	1.23	.21	1.32	.05	1.47	-.12	1.63	.20	1.33	.22	1.31
2	-.06	1.39	-.01	1.35	.32	1.09	.35	1.07	-.07	1.39	-.08	1.41
3	.17	1.51	-.01	1.73	-.00	1.72	.16	1.52	.18	1.50	.49	1.13
4	.08	1.51	.19	1.40	.14	1.45	.41	1.18	.14	1.45	.17	1.42
5	.21	1.25	.01	1.46	.06	1.41	-.01	1.48	-.06	1.54	-.06	1.53
6	.37	1.21	.21	1.35	.14	1.41	.05	1.50	.01	1.53	-.21	1.72
7	-.10	1.40	.34	1.06	-.32	1.58	-.07	1.38	-.18	1.47	-.25	1.52
8	.02	1.55	.16	1.41	.04	1.53	-.06	1.62	.08	1.49	.30	1.27
9	-.13	1.51	-.28	1.63	-.02	1.42	.21	1.24	.09	1.34	-.05	1.44
10	.02	1.31	.32	1.06	-.15	1.45	-.13	1.43	-.11	1.42	.12	1.23
11	-.26	1.58	-.16	1.49	-.50	1.77	.06	1.31	-.18	1.51	-.04	1.40
12	.24	1.28	.01	1.50	.28	1.24	-.09	1.60	.01	1.50	-.21	1.72
13	.26	1.31	.13	1.45	.03	1.55	.08	1.50	.15	1.43	.07	1.51
14	-.33	1.67	-.40	1.73	-.09	1.43	-.06	1.40	-.02	1.36	-.03	1.37
15	.02	1.43	-.15	1.57	.27	1.22	.09	1.37	-.14	1.56	-.26	1.66
16	-.02	1.42	.08	1.33	-.09	1.50	.12	1.28	-.25	1.68	-.10	1.51
17	.32	1.16	.03	1.39	.67	.88	.16	1.29	-.05	1.45	.14	1.30
18	.15	1.29	.24	1.20	.11	1.32	-.27	1.66	-.44	1.81	-.28	1.67
19	.16	1.41	.02	1.56	.29	1.29	.10	1.48	-.13	1.71	-.13	1.71
20	-.21	1.53	-.07	1.41	.18	1.18	.10	1.26	.08	1.27	.09	1.26
21	-.24	1.57	-.18	1.52	.16	1.24	.02	1.36	-.19	1.53	-.05	1.41
22	-.30	1.58	-.25	1.53	.11	1.22	-.09	1.40	-.01	1.33	.11	1.22
23	.15	1.47	.22	1.40	-.00	1.62	.08	1.54	-.10	1.71	.20	1.41
24	-.02	1.54	.14	1.40	-.06	1.58	.07	1.46	.43	1.12	.17	1.37
25	.22	1.37	.29	1.31	.10	1.49	-.01	1.59	.16	1.43	-.15	1.72

Complement means:

A6-50-15

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.02	-.03	.19	.15	.06	-.01	.10	-.01	-.09	-.02	.08	.16
2	.11	.25	-.17	.03	.07	.11	.01	.07	.04	.14	-.18	-.04
3	.06	.12	.19	.09	-.13	.01	.03	-.10	.19	.11	.16	.18
4	.21	.39	.11	.05	.04	.00	.09	-.04	.17	.38	.02	.09
5	-.17	.00	.05	.00	-.05	-.02	.04	.03	-.12	.02	.01	-.04
6	.14	.04	-.01	.00	.10	.08	-.02	-.02	.05	-.04	.01	.02
7	.10	.11	-.05	-.13	.00	.17	-.10	.05	.10	-.05	.05	-.18
8	.18	.04	.14	.10	-.04	-.01	.05	-.03	.23	.05	.09	.13
9	-.04	-.11	-.12	-.06	-.11	-.08	.03	-.06	.07	-.03	-.15	.00
10	-.12	.15	.05	-.09	-.18	.00	.05	.08	.05	.15	.00	-.17
11	-.26	-.06	-.13	-.26	.00	-.02	-.02	-.02	-.26	-.04	-.10	-.24
12	.18	-.05	.01	.15	.02	.04	-.01	-.03	.16	-.09	.02	.18
13	.16	.15	.20	.10	.04	.04	.03	.07	.11	.11	.17	.03
14	-.06	-.21	-.18	-.12	-.10	-.02	-.09	-.05	.04	-.19	-.09	-.07
15	.00	.02	-.12	-.05	-.02	.02	.05	-.06	.02	.00	-.17	.01
16	.06	.10	-.09	-.15	.09	.11	-.11	.04	-.03	-.01	.02	-.19
17	-.05	-.01	.03	.16	.03	.06	.10	.07	-.08	-.07	-.07	.09
18	.00	.07	-.06	-.12	-.01	-.06	.03	-.05	.01	.13	-.09	-.07
19	.01	.07	.03	.07	.05	-.10	.07	.03	-.04	.17	-.04	.04
20	.00	.00	-.13	.15	-.02	.08	-.07	.06	.02	-.08	-.06	.09
21	-.06	-.08	-.14	-.05	.05	-.04	-.05	.01	-.11	-.04	-.09	-.06
22	-.07	-.20	-.10	.07	.01	-.07	-.04	.07	-.08	-.13	-.06	.00
23	.09	.18	.09	.03	-.05	.02	.06	-.01	.14	.16	.03	.05
24	.02	.05	.06	.16	.02	.12	.07	.03	.00	-.07	-.01	.13
25	.16	.17	.13	.06	.03	.07	.03	-.02	.13	.10	.10	.08
mean:	.03	.05	.00	.01	.00	.02	.01	.00	.03	.03	-.01	.01
sd	.11	.13	.12	.11	.07	.07	.06	.05	.11	.12	.09	.11
								mean absolute error:	.09	.10	.07	.09
								SD:	.07	.08	.06	.07

Taxon means:

A6-50-15

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.54	1.54	1.34	1.37	1.56	1.48	1.46	1.49	-.02	.07	-.12	-.12
2	1.26	1.14	1.47	1.32	1.44	1.48	1.49	1.54	-.18	-.34	-.02	-.22
3	1.65	1.57	1.49	1.61	1.46	1.51	1.53	1.53	.19	.06	-.04	.08
4	1.38	1.21	1.48	1.54	1.45	1.49	1.50	1.58	-.07	-.29	-.02	-.04
5	1.65	1.47	1.42	1.48	1.50	1.51	1.41	1.52	.15	-.04	.01	-.04
6	1.41	1.50	1.54	1.54	1.53	1.54	1.64	1.46	-.12	-.04	-.10	.08
7	1.25	1.24	1.37	1.43	1.58	1.52	1.58	1.48	-.33	-.28	-.21	-.05
8	1.38	1.53	1.42	1.47	1.50	1.56	1.51	1.38	-.12	-.03	-.09	.09
9	1.44	1.49	1.50	1.46	1.41	1.58	1.53	1.61	.03	-.08	-.03	-.15
10	1.43	1.20	1.28	1.40	1.60	1.57	1.39	1.53	-.17	-.37	-.11	-.13
11	1.58	1.42	1.47	1.58	1.60	1.52	1.54	1.64	-.02	-.11	-.07	-.06
12	1.34	1.56	1.50	1.36	1.40	1.67	1.53	1.38	-.06	-.11	-.03	-.02
13	1.42	1.43	1.37	1.48	1.46	1.45	1.52	1.49	-.04	-.02	-.15	.00
14	1.40	1.55	1.52	1.46	1.51	1.52	1.43	1.49	-.10	.02	.09	-.03
15	1.44	1.43	1.54	1.49	1.53	1.46	1.54	1.51	-.09	-.03	.01	-.02
16	1.35	1.30	1.50	1.57	1.52	1.48	1.47	1.51	-.18	-.18	.04	.06
17	1.45	1.42	1.39	1.28	1.48	1.55	1.48	1.51	-.03	-.13	-.09	-.23
18	1.42	1.36	1.48	1.53	1.59	1.43	1.48	1.46	-.17	-.07	.00	.07
19	1.57	1.51	1.55	1.51	1.62	1.46	1.49	1.52	-.05	.05	.06	-.01
20	1.34	1.34	1.46	1.21	1.53	1.55	1.48	1.64	-.18	-.21	-.02	-.43
21	1.42	1.43	1.49	1.41	1.49	1.44	1.54	1.44	-.07	.00	-.05	-.03
22	1.38	1.49	1.40	1.25	1.57	1.53	1.45	1.46	-.19	-.04	-.05	-.20
23	1.52	1.44	1.52	1.58	1.36	1.56	1.56	1.49	.16	-.12	-.04	.09
24	1.51	1.48	1.47	1.38	1.54	1.46	1.51	1.49	-.04	.02	-.04	-.12
25	1.43	1.42	1.46	1.53	1.45	1.57	1.61	1.61	-.02	-.15	-.15	-.08
mean:	1.44	1.42	1.46	1.45	1.51	1.52	1.51	1.51	-.07	-.10	-.05	-.06
sd	.10	.12	.07	.11	.07	.05	.06	.07	.12	.12	.07	.12
								mean absolute error:	.11	.11	.07	.10
								SD:	.08	.10	.05	.09

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

N3-50-20

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.57	2.59	-.45	2.49	-.39	2.43	-.44	2.48	-.24	2.29	-.12	2.17
2	-.56	2.80	-.58	2.82	-.12	2.37	-.07	2.32	-.25	2.50	-.20	2.45
3	-.43	2.71	-.45	2.73	-.11	2.34	-.19	2.43	-.04	2.26	-.10	2.33
4	-.70	2.76	-.52	2.55	-.20	2.18	-.32	2.32	-.42	2.43	-.34	2.35
5	-.62	2.93	-.50	2.79	-.45	2.73	-.11	2.34	-.35	2.61	-.31	2.56
6	-.77	2.40	-.97	2.57	-.70	2.34	-.72	2.35	-.70	2.33	-.35	2.03
7	-.82	2.37	-.83	2.38	-.74	2.31	-.95	2.48	-.32	1.96	-.57	2.16
8	-.55	2.62	-.52	2.59	-.39	2.43	-.46	2.52	-.16	2.19	-.17	2.20
9	-.51	2.39	-.55	2.43	-.46	2.34	-.34	2.22	.01	1.87	-.13	2.01
10	-.70	2.62	-.75	2.67	-.93	2.85	-.52	2.45	.10	1.85	-.38	2.32
11	-.36	2.48	-.20	2.32	-.16	2.28	-.01	2.12	-.31	2.43	.02	2.09
12	-.47	2.51	-.82	2.82	-.30	2.36	-.37	2.41	-.25	2.31	-.39	2.44
13	-.51	2.86	-.35	2.69	-.14	2.47	-.22	2.56	-.11	2.44	.04	2.28
14	-.39	2.42	-.45	2.48	-.41	2.44	-.43	2.46	-.06	2.13	.10	1.99
15	-.52	2.44	-.59	2.50	-.53	2.44	-.41	2.33	-.33	2.25	-.49	2.41
16	-.52	2.36	-.40	2.24	-.34	2.19	-.60	2.44	-.23	2.07	-.20	2.05
17	-.51	2.51	-.42	2.42	-.45	2.45	-.36	2.38	-.13	2.16	.01	2.03
18	-.51	2.52	-.44	2.45	-.52	2.53	-.37	2.39	-.54	2.55	-.62	2.62
19	-.64	2.82	-.52	2.68	-.30	2.41	-.37	2.50	-.32	2.44	-.18	2.26
20	-.52	2.45	-.25	2.21	-.56	2.48	-.41	2.35	-.07	2.06	-.16	2.13
21	-.89	2.94	-.82	2.87	-.35	2.41	-.38	2.45	-.35	2.42	-.42	2.48
22	-.59	2.61	-.89	2.90	-.43	2.45	-.57	2.58	-.19	2.22	-.16	2.19
23	-.34	2.69	-.55	2.92	-.30	2.65	-.28	2.63	-.24	2.58	-.45	2.81
24	-.69	2.81	-.49	2.60	-.18	2.29	-.14	2.25	-.15	2.25	.07	2.03
25	-.42	2.60	-.53	2.71	-.27	2.43	-.35	2.52	-.36	2.53	-.41	2.58

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	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.12	2.18	-.24	2.29	-.16	2.22	-.15	2.20	-.14	2.20	-.22	2.27
2	-.19	2.44	-.26	2.51	-.18	2.43	-.31	2.56	.02	2.24	-.06	2.31
3	-.24	2.49	-.26	2.51	-.47	2.75	-.34	2.60	.03	2.19	-.27	2.52
4	-.65	2.70	-.38	2.40	.01	1.94	.14	1.79	-.15	2.13	-.26	2.25
5	-.36	2.63	-.09	2.32	-.20	2.44	.03	2.18	-.16	2.39	-.14	2.37
6	-.50	2.16	-.54	2.20	-.51	2.17	-.60	2.25	-.54	2.19	-.15	1.85
7	-.47	2.08	-.72	2.29	-.30	1.93	-.64	2.23	-.57	2.16	-.33	1.96
8	-.28	2.32	-.18	2.21	-.07	2.09	-.16	2.18	-.10	2.13	-.11	2.13
9	-.41	2.28	-.43	2.31	-.03	1.91	-.26	2.14	-.34	2.22	-.17	2.06
10	-.25	2.19	-.50	2.43	-.00	1.95	-.01	1.96	.01	1.93	-.19	2.13
11	.05	2.05	.17	1.93	-.09	2.20	-.21	2.33	.16	1.94	.05	2.05
12	-.05	2.13	-.07	2.14	-.26	2.32	-.25	2.31	-.13	2.20	-.06	2.14
13	-.10	2.43	-.09	2.42	-.16	2.49	.34	1.97	-.16	2.50	-.10	2.43
14	-.00	2.08	-.02	2.09	-.14	2.20	-.10	2.16	-.12	2.18	-.14	2.20
15	-.43	2.34	-.48	2.39	-.05	1.97	-.49	2.40	-.06	1.98	-.02	1.95
16	-.16	2.00	-.37	2.21	-.30	2.14	-.11	1.95	-.40	2.24	.01	1.84
17	-.27	2.29	-.47	2.47	-.21	2.23	-.23	2.25	-.28	2.30	.01	2.03
18	-.14	2.19	.06	2.00	-.28	2.32	-.18	2.22	-.19	2.23	-.41	2.43
19	-.25	2.35	-.24	2.34	.06	1.97	-.12	2.19	-.06	2.12	-.03	2.08
20	-.61	2.53	-.67	2.57	-.15	2.12	-.18	2.15	-.15	2.12	-.14	2.12
21	-.42	2.48	-.52	2.58	-.34	2.41	-.29	2.36	-.25	2.32	-.12	2.19
22	-.36	2.39	-.26	2.29	.06	1.97	.19	1.85	-.02	2.05	-.09	2.12
23	-.15	2.48	-.03	2.35	.12	2.18	-.16	2.49	.00	2.31	-.30	2.64
24	-.20	2.31	-.49	2.61	-.02	2.12	.05	2.04	-.10	2.20	.21	1.88
25	-.04	2.19	-.13	2.28	-.44	2.61	-.34	2.51	-.14	2.30	-.15	2.31

Complement means:

N3-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.34	-.32	-.24	-.18	.04	-.01	.13	-.03	-.38	-.30	-.37	-.15
2	-.28	-.38	-.13	-.14	.14	.08	.14	-.02	-.43	-.46	-.26	-.12
3	-.25	-.34	-.21	-.16	.18	-.06	.04	.13	-.43	-.29	-.25	-.30
4	-.40	-.31	-.37	-.19	.10	-.09	-.17	-.08	-.50	-.23	-.20	-.11
5	-.31	-.23	-.32	-.24	-.03	-.01	-.06	-.10	-.27	-.22	-.25	-.14
6	-.68	-.64	-.45	-.58	.00	.12	.00	.00	-.68	-.76	-.45	-.58
7	-.78	-.73	-.51	-.39	-.04	.00	-.10	.07	-.74	-.73	-.41	-.46
8	-.39	-.30	-.26	-.11	.02	-.05	-.01	.06	-.40	-.25	-.24	-.18
9	-.34	-.40	-.35	-.12	.03	-.05	-.05	-.03	-.37	-.35	-.29	-.10
10	-.55	-.40	-.46	.04	.04	.10	-.04	.13	-.59	-.51	-.42	-.09
11	-.07	-.13	-.02	-.08	.04	-.02	.06	.09	-.11	-.11	-.08	-.17
12	-.53	-.26	-.14	-.21	.00	.09	.09	-.05	-.53	-.35	-.22	-.16
13	-.17	-.09	-.11	-.14	-.01	.00	.13	-.16	-.16	-.09	-.24	.02
14	-.26	-.17	-.18	-.11	.00	.08	.16	-.11	-.26	-.25	-.34	.00
15	-.50	-.50	-.33	-.15	.02	.03	-.03	.13	-.52	-.53	-.29	-.28
16	-.40	-.33	-.16	-.31	.04	.04	.01	-.03	-.44	-.37	-.18	-.28
17	-.26	-.40	-.24	-.21	.08	.10	.16	-.11	-.33	-.51	-.40	-.09
18	-.47	-.21	-.36	-.34	.17	.17	.07	-.02	-.64	-.38	-.43	-.32
19	-.36	-.33	-.20	-.11	-.09	-.14	.00	-.13	-.27	-.20	-.20	.02
20	-.27	-.46	-.44	-.12	.10	.04	.00	.06	-.37	-.50	-.43	-.18
21	-.54	-.56	-.30	-.32	.08	.00	.00	.15	-.62	-.57	-.30	-.47
22	-.54	-.22	-.30	-.05	-.03	-.01	.10	.06	-.51	-.22	-.40	-.11
23	-.43	-.18	-.25	-.04	-.09	.13	.06	.03	-.34	-.31	-.31	-.07
24	-.19	-.38	-.06	-.09	.15	-.12	.06	.00	-.34	-.26	-.12	-.09
25	-.43	-.30	-.15	-.32	-.13	.05	.03	.14	-.30	-.35	-.18	-.46
mean:	-.39	-.34	-.26	-.19	.03	.02	.03	.01	-.42	-.36	-.29	-.19
SD:	.16	.15	.13	.13	.08	.08	.08	.09	.16	.17	.10	.16
								mean absolute error:	.42	.36	.29	.20
								SD:	.16	.17	.10	.15

Taxon means:

N3-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	2.38	2.36	2.29	2.24	1.87	2.03	2.00	2.03	.51	.33	.29	.21
2	2.53	2.62	2.38	2.39	2.15	2.05	2.14	2.02	.38	.58	.24	.37
3	2.50	2.61	2.45	2.40	2.08	2.13	2.03	2.01	.41	.47	.42	.39
4	2.41	2.31	2.38	2.17	1.95	2.01	1.98	1.92	.45	.31	.40	.25
5	2.56	2.47	2.58	2.48	1.98	1.93	2.11	2.04	.59	.54	.47	.44
6	2.32	2.28	2.12	2.23	1.96	1.97	1.84	2.09	.36	.31	.27	.14
7	2.34	2.30	2.11	2.02	2.02	1.87	1.94	2.00	.32	.43	.17	.02
8	2.43	2.34	2.30	2.14	2.07	2.06	1.94	2.04	.37	.27	.36	.10
9	2.22	2.28	2.23	2.00	1.95	1.95	1.94	2.01	.27	.32	.28	-.01
10	2.48	2.34	2.39	1.91	1.92	2.05	2.01	1.98	.56	.29	.38	-.07
11	2.18	2.24	2.13	2.19	2.01	1.91	2.01	1.98	.17	.33	.12	.21
12	2.56	2.32	2.21	2.27	2.15	1.95	2.11	1.99	.40	.37	.10	.29
13	2.51	2.42	2.44	2.48	1.93	1.89	2.13	1.97	.57	.53	.31	.50
14	2.31	2.23	2.24	2.17	2.07	2.05	2.03	1.98	.24	.18	.20	.19
15	2.41	2.41	2.24	2.07	2.06	2.01	1.97	2.07	.36	.40	.27	.00
16	2.24	2.17	2.01	2.15	1.96	1.99	1.86	1.98	.28	.18	.15	.17
17	2.28	2.41	2.26	2.23	1.97	2.08	1.97	1.91	.31	.34	.29	.32
18	2.49	2.25	2.38	2.37	2.00	1.96	2.08	2.00	.49	.28	.31	.37
19	2.48	2.45	2.28	2.17	1.90	1.98	1.85	1.90	.59	.47	.43	.27
20	2.23	2.39	2.38	2.10	1.95	2.05	2.14	2.07	.28	.35	.23	.03
21	2.60	2.62	2.36	2.38	2.15	2.20	2.08	2.13	.45	.43	.28	.25
22	2.56	2.25	2.32	2.08	2.06	2.00	1.96	2.11	.50	.24	.36	-.04
23	2.78	2.51	2.59	2.36	2.01	2.10	2.14	1.94	.77	.41	.45	.42
24	2.29	2.49	2.16	2.19	1.87	2.04	2.01	2.10	.42	.44	.15	.09
25	2.60	2.46	2.31	2.48	2.16	2.10	2.05	2.16	.44	.36	.26	.32
mean:	2.43	2.38	2.30	2.23	2.01	2.01	2.01	2.02	.42	.37	.29	.21
SD:	.14	.12	.14	.15	.09	.08	.09	.07	.13	.10	.10	.16
								mean absolute error:	.42	.37	.29	.22
								SD:	.13	.10	.10	.15

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

N6-50-20

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.74	2.79	-.51	2.54	-.54	2.57	-.47	2.50	-.29	2.32	-.25	2.27
2	-.60	2.63	-.59	2.62	-.21	2.25	-.51	2.53	-.35	2.38	-.24	2.27
3	-.74	2.71	-.44	2.42	-.27	2.25	-.60	2.57	-.12	2.11	-.15	2.14
4	-.86	2.92	-.65	2.71	-.30	2.35	-.52	2.57	-.20	2.25	-.19	2.24
5	-.48	2.64	-.70	2.87	-.57	2.73	-.48	2.63	-.20	2.31	-.19	2.31
6	-.95	2.85	-.81	2.71	-.38	2.31	-.56	2.48	-.69	2.60	-.67	2.58
7	-.62	2.60	-1.01	2.97	-.29	2.27	-.41	2.39	-.28	2.27	-.51	2.49
8	-.90	2.83	-.80	2.74	-.61	2.57	-.79	2.73	-.16	2.15	-.61	2.56
9	-.49	2.28	-.42	2.23	-.66	2.43	-.73	2.50	-.37	2.18	-.39	2.20
10	-.52	2.69	-.51	2.67	-.44	2.60	-.49	2.65	-.10	2.25	-.35	2.51
11	-.68	2.73	-.77	2.82	-.61	2.66	-.66	2.71	-.17	2.17	-.22	2.23
12	-.75	2.75	-.88	2.88	-.38	2.38	-.26	2.26	-.33	2.33	-.30	2.30
13	-.75	2.86	-.56	2.67	-.25	2.36	-.49	2.60	-.19	2.30	-.42	2.53
14	-.66	2.66	-.70	2.71	-.50	2.50	-.41	2.41	-.12	2.12	-.25	2.25
15	-.71	2.59	-.45	2.37	-.64	2.53	-.81	2.69	-.16	2.11	-.43	2.35
16	-.73	2.78	-.54	2.59	-.72	2.78	-.57	2.62	-.31	2.36	-.33	2.37
17	-.75	2.67	-.59	2.52	-.79	2.71	-.80	2.71	-.13	2.10	-.29	2.24
18	-.74	2.60	-.60	2.48	-.58	2.45	-.52	2.40	-.13	2.06	-.05	1.99
19	-.57	2.91	-.58	2.93	-.07	2.35	-.30	2.61	-.05	2.33	-.38	2.70
20	-.56	2.57	-1.02	3.02	-.63	2.64	-.72	2.73	-.21	2.23	-.19	2.21
21	-.49	2.75	-.60	2.87	-.41	2.65	-.52	2.77	.15	2.02	.28	1.88
22	-.44	2.47	-.74	2.76	-.48	2.52	-.54	2.58	-.19	2.23	-.42	2.46
23	-.66	2.70	-.43	2.47	-.58	2.62	-.37	2.42	-.28	2.33	-.29	2.34
24	-.83	2.85	-.71	2.73	-.34	2.35	-.32	2.34	-.15	2.16	-.24	2.26
25	-.52	2.54	-.60	2.62	-.46	2.48	-.32	2.34	-.30	2.32	-.35	2.37

N6-50-20

	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.35	2.38	-.27	2.30	-.06	2.08	-.16	2.18	-.03	2.05	-.08	2.10
2	-.44	2.47	-.40	2.43	-.08	2.11	-.27	2.31	-.26	2.30	-.18	2.22
3	-.32	2.30	-.41	2.39	.02	1.98	.17	1.83	.25	1.75	.03	1.96
4	-.43	2.48	-.24	2.29	.04	2.00	-.20	2.24	-.22	2.27	-.34	2.38
5	-.37	2.50	-.38	2.52	.08	2.01	-.14	2.25	.04	2.05	.03	2.07
6	-.63	2.54	-.60	2.52	-.39	2.32	-.54	2.46	-.01	1.96	-.18	2.11
7	-.34	2.32	-.43	2.41	-.57	2.55	-.63	2.61	-.04	2.03	-.21	2.20
8	-.51	2.48	-.26	2.24	-.43	2.40	-.32	2.29	-.07	2.07	-.36	2.34
9	-.38	2.19	-.51	2.30	-.15	1.98	-.60	2.39	-.18	2.01	-.26	2.09
10	-.15	2.30	-.36	2.51	.02	2.12	.08	2.05	-.38	2.54	-.26	2.42
11	-.31	2.32	-.16	2.16	-.28	2.29	-.05	2.04	.04	1.95	-.26	2.28
12	-.32	2.32	-.12	2.12	-.11	2.12	-.10	2.10	-.15	2.15	-.05	2.05
13	-.43	2.54	-.57	2.69	-.26	2.37	-.25	2.36	-.31	2.43	-.06	2.17
14	-.47	2.48	-.54	2.55	-.43	2.44	-.11	2.11	-.27	2.27	-.14	2.14
15	-.49	2.40	-.50	2.41	-.18	2.13	-.09	2.04	-.13	2.08	-.07	2.03
16	-.44	2.49	-.41	2.46	-.15	2.19	.09	1.94	-.14	2.18	-.44	2.49
17	-.50	2.44	-.65	2.57	-.23	2.19	-.34	2.29	-.19	2.15	-.32	2.27
18	-.38	2.28	-.42	2.32	-.19	2.11	-.19	2.12	-.22	2.14	-.21	2.13
19	-.17	2.47	-.29	2.60	-.09	2.38	-.04	2.32	.01	2.26	-.19	2.49
20	-.37	2.39	-.45	2.46	-.54	2.55	-.31	2.33	-.63	2.65	-.45	2.47
21	-.32	2.55	-.21	2.43	.03	2.16	.14	2.03	.04	2.14	.16	2.00
22	-.37	2.41	-.19	2.23	-.12	2.17	-.26	2.30	.23	1.83	-.21	2.25
23	-.55	2.59	-.47	2.51	.01	2.04	.04	2.02	-.05	2.10	-.10	2.15
24	-.27	2.29	-.39	2.40	-.16	2.18	-.10	2.12	-.31	2.32	.09	1.93
25	-.12	2.14	-.21	2.22	-.21	2.22	-.51	2.53	-.10	2.11	-.22	2.24

Complement means:

N6-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.41	-.39	-.33	-.13	.02	.07	-.04	.05	-.43	-.46	-.29	-.18
2	-.44	-.43	-.28	-.23	-.04	-.04	-.01	.05	-.41	-.39	-.27	-.27
3	-.40	-.33	-.18	.05	-.02	.02	-.01	-.01	-.38	-.34	-.17	.06
4	-.45	-.44	-.36	-.13	-.01	.03	-.03	.05	-.44	-.46	-.33	-.18
5	-.45	-.33	-.30	-.02	-.09	-.01	.03	-.01	-.37	-.32	-.34	-.01
6	-.68	-.70	-.40	-.37	.03	-.04	-.02	-.03	-.71	-.66	-.37	-.33
7	-.64	-.56	-.28	-.30	-.09	.00	.00	-.09	-.56	-.56	-.28	-.20
8	-.73	-.49	-.50	-.22	.09	.00	.03	.07	-.82	-.49	-.53	-.29
9	-.51	-.53	-.43	-.23	.07	.07	.03	.08	-.59	-.61	-.46	-.32
10	-.45	-.27	-.28	-.15	.02	.07	.03	-.02	-.47	-.34	-.32	-.13
11	-.55	-.29	-.40	-.14	-.01	.01	-.07	-.01	-.55	-.30	-.33	-.13
12	-.48	-.32	-.25	-.20	-.06	-.03	.05	-.03	-.43	-.29	-.30	-.17
13	-.49	-.52	-.25	-.25	.02	-.02	.02	.03	-.50	-.50	-.27	-.29
14	-.45	-.44	-.37	-.27	.02	-.08	-.04	-.05	-.47	-.36	-.33	-.22
15	-.57	-.43	-.40	-.16	.00	-.04	.05	-.04	-.57	-.39	-.45	-.11
16	-.48	-.35	-.53	-.20	-.03	-.04	-.08	.01	-.45	-.31	-.46	-.21
17	-.56	-.58	-.54	-.18	-.04	-.04	.00	.04	-.52	-.53	-.54	-.22
18	-.39	-.45	-.39	-.18	.06	-.01	.05	-.04	-.45	-.44	-.44	-.14
19	-.42	-.30	-.14	-.04	-.02	.02	.14	.07	-.39	-.32	-.28	-.11
20	-.64	-.44	-.48	-.46	-.04	.02	-.05	.01	-.60	-.46	-.44	-.47
21	-.28	-.19	-.19	.07	.04	-.02	.07	.03	-.32	-.16	-.25	.05
22	-.57	-.29	-.35	-.03	-.09	-.04	-.01	.12	-.47	-.26	-.34	-.14
23	-.37	-.37	-.41	-.10	.02	-.13	-.01	.05	-.38	-.24	-.40	-.15
24	-.42	-.44	-.17	-.20	-.03	-.07	.04	-.12	-.40	-.37	-.22	-.09
25	-.42	-.41	-.27	-.20	.01	.00	.04	-.07	-.43	-.42	-.31	-.13
mean:	-.49	-.41	-.34	-.17	-.01	-.01	.01	.01	-.48	-.40	-.35	-.18
SD:	.10	.11	.11	.12	.05	.05	.05	.06	.11	.12	.09	.12
								mean absolute error:	.48	.40	.35	.18
								SD:	.11	.12	.09	.10

Taxon means:

N6-50-20

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	2.44	2.42	2.35	2.15	2.09	2.00	2.01	1.98	.35	.42	.34	.16
2	2.48	2.46	2.31	2.26	2.12	1.99	2.07	2.08	.35	.46	.24	.19
3	2.38	2.31	2.17	1.94	2.05	2.08	2.04	2.02	.32	.23	.13	-.08
4	2.50	2.48	2.41	2.17	2.05	2.09	2.05	2.02	.46	.39	.35	.16
5	2.60	2.47	2.44	2.12	1.94	1.95	1.95	1.96	.66	.52	.49	.16
6	2.59	2.61	2.32	2.29	1.96	2.05	2.03	2.07	.63	.56	.29	.22
7	2.62	2.54	2.27	2.28	2.08	2.07	2.02	1.98	.53	.47	.25	.30
8	2.68	2.46	2.46	2.20	2.11	1.95	2.05	1.95	.57	.50	.41	.26
9	2.31	2.32	2.24	2.06	1.93	2.00	1.93	1.92	.38	.33	.31	.14
10	2.61	2.42	2.44	2.30	2.00	2.01	2.06	2.02	.61	.41	.37	.28
11	2.59	2.31	2.42	2.14	2.07	2.00	1.98	2.03	.51	.31	.44	.10
12	2.48	2.32	2.25	2.20	1.98	2.06	1.96	2.02	.50	.26	.29	.18
13	2.60	2.64	2.36	2.36	1.95	2.06	2.07	2.09	.65	.58	.29	.27
14	2.46	2.44	2.37	2.28	1.95	1.96	2.03	1.98	.51	.48	.34	.30
15	2.47	2.35	2.32	2.11	1.99	2.01	2.03	1.99	.48	.34	.29	.11
16	2.53	2.40	2.58	2.24	1.99	1.96	2.08	2.10	.54	.43	.50	.14
17	2.49	2.51	2.48	2.15	2.09	2.13	2.05	2.06	.41	.38	.43	.09
18	2.29	2.34	2.29	2.10	2.01	1.91	2.02	2.04	.28	.43	.27	.06
19	2.75	2.61	2.44	2.32	1.92	2.00	2.01	2.05	.82	.62	.43	.27
20	2.65	2.46	2.50	2.48	2.04	2.02	2.09	2.01	.61	.43	.41	.46
21	2.51	2.40	2.40	2.11	1.91	1.99	1.99	1.88	.59	.41	.41	.22
22	2.60	2.34	2.39	2.08	2.12	2.14	2.11	1.98	.48	.20	.29	.10
23	2.41	2.41	2.45	2.16	2.01	2.00	2.10	2.01	.40	.41	.35	.14
24	2.44	2.46	2.19	2.22	2.02	2.11	1.98	2.02	.42	.35	.22	.20
25	2.44	2.43	2.29	2.22	2.00	1.93	1.97	2.06	.44	.50	.32	.16
mean:	2.52	2.44	2.37	2.20	2.02	2.02	2.03	2.01	.50	.42	.34	.18
SD:	.11	.09	.10	.11	.06	.06	.05	.05	.12	.10	.09	.10
								mean absolute error:	.50	.42	.34	.19
								SD:	.12	.10	.09	.09

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

D3-50-v1

	output/input											
	y/x		x/y		z/x		x/z		v/x		x/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.72	2.11	-.79	2.18	-.48	1.88	-.54	1.94	-.13	1.54	-.44	1.84
2	-.65	2.27	-1.04	2.69	-.49	2.10	-.81	2.44	.14	1.42	-.26	1.85
3	-.61	2.34	-.89	2.67	-.59	2.32	-.81	2.57	.07	1.57	-.19	1.87
4	-.81	2.27	-.76	2.23	-.43	1.95	-.74	2.20	.15	1.46	-.15	1.71
5	-1.12	2.26	-1.19	2.32	-1.07	2.22	-1.12	2.26	-.13	1.45	-.45	1.71
6	-.82	2.32	-1.14	2.59	-.33	1.89	-.87	2.36	.14	1.49	-.28	1.85
7	-.62	2.07	-.70	2.15	-.51	1.95	-.81	2.26	-.12	1.55	-.58	2.02
8	-.79	2.12	-1.03	2.34	-.59	1.93	-.76	2.09	-.27	1.64	-.41	1.77
9	-.62	2.34	-.60	2.32	-.45	2.14	-.71	2.46	-.09	1.72	-.16	1.80
10	-.34	1.98	-.48	2.15	-.17	1.79	-.51	2.19	-.06	1.65	-.32	1.96
11	-.40	2.27	-.56	2.46	-.13	1.97	-.52	2.40	-.16	2.00	-.30	2.16
12	-.62	2.08	-.80	2.26	-.25	1.72	-.49	1.95	-.03	1.50	-.15	1.62
13	-.73	2.18	-.78	2.22	-.50	1.96	-.82	2.26	-.30	1.77	-.21	1.69
14	-.51	2.28	-.57	2.35	-.39	2.15	-.68	2.47	.07	1.62	-.23	1.96
15	-.83	2.17	-1.03	2.37	-.09	1.48	-.58	1.94	-.21	1.59	-.72	2.08
16	-.97	2.25	-1.08	2.35	-.49	1.81	-.63	1.94	-.29	1.62	-.63	1.94
17	-.52	2.07	-.60	2.16	-.70	2.27	-.79	2.37	-.21	1.74	-.48	2.03
18	-.56	2.23	-.62	2.30	-.27	1.87	-.77	2.47	.07	1.47	-.36	1.98
19	-.36	2.03	-.69	2.35	-.01	1.69	-.38	2.05	-.07	1.75	-.28	1.95
20	-.58	2.24	-.72	2.43	-.77	2.48	-.89	2.63	-.11	1.64	-.40	2.01
21	-.50	1.67	-.86	1.94	-.66	1.79	-1.11	2.13	-.08	1.35	-.61	1.76
22	-.74	1.98	-.84	2.06	-.22	1.52	-.50	1.77	-.27	1.56	-.54	1.80
23	-.36	2.05	-.32	2.00	-.13	1.79	-.33	2.02	-.27	1.94	-.11	1.77
24	-.89	2.01	-.99	2.10	-.53	1.68	-.74	1.87	-.51	1.66	-.59	1.73
25	-.49	2.20	-.66	2.38	-.23	1.93	-.43	2.14	-.03	1.71	-.56	2.28

D3-50-v1

	output/input											
	z/y		y/z		v/y		y/v		v/z		z/v	
sample	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax	comp	tax
1	-.43	1.83	-.42	1.82	.08	1.33	-.12	1.54	-.01	1.42	-.13	1.54
2	-.29	1.88	-.49	2.09	-.12	1.70	-.35	1.94	.04	1.52	.28	1.27
3	-.42	2.13	-.49	2.21	-.18	1.86	-.02	1.67	.23	1.39	.10	1.54
4	-.26	1.80	-.22	1.78	.05	1.55	-.19	1.75	-.09	1.66	-.17	1.74
5	-.69	1.90	-.85	2.04	-.08	1.40	-.56	1.80	-.07	1.39	-.28	1.57
6	-.66	2.18	-.60	2.12	.05	1.57	-.12	1.71	-.15	1.74	-.31	1.87
7	-.27	1.71	-.65	2.10	-.22	1.65	-.18	1.62	-.07	1.50	-.02	1.45
8	-.49	1.84	-.62	1.96	-.13	1.50	-.18	1.55	.05	1.34	.06	1.33
9	-.08	1.71	-.39	2.07	.12	1.47	-.16	1.80	.04	1.56	-.18	1.83
10	-.12	1.72	-.30	1.93	.36	1.15	.04	1.53	.36	1.15	.07	1.49
11	-.12	1.96	-.19	2.03	.16	1.65	.01	1.81	-.04	1.87	.12	1.69
12	-.73	2.19	-.53	1.99	.10	1.37	.05	1.42	.16	1.31	.18	1.30
13	-.44	1.91	-.58	2.04	-.15	1.63	-.25	1.73	-.16	1.64	.11	1.38
14	-.10	1.82	-.19	1.92	-.13	1.85	.11	1.58	.18	1.49	-.22	1.95
15	-.41	1.78	-.68	2.04	-.20	1.58	-.64	2.00	.02	1.37	-.14	1.52
16	-.42	1.74	-.23	1.56	-.26	1.59	-.24	1.57	-.18	1.52	-.03	1.38
17	-.42	1.96	-.43	1.97	-.22	1.75	-.28	1.81	-.05	1.56	.00	1.50
18	-.28	1.89	-.37	2.00	-.08	1.65	-.29	1.90	-.06	1.62	-.09	1.66
19	-.02	1.70	-.36	2.03	-.17	1.85	-.24	1.91	.02	1.67	.09	1.60
20	-.35	1.95	-.52	2.17	-.08	1.60	-.18	1.73	-.00	1.50	-.15	1.69
21	-.22	1.46	-.14	1.39	-.20	1.44	-.44	1.62	-.22	1.46	-.54	1.70
22	-.00	1.33	-.40	1.68	-.09	1.41	-.44	1.71	.08	1.26	.07	1.27
23	-.10	1.75	-.34	2.03	.36	1.24	.42	1.17	.17	1.46	.32	1.28
24	-.42	1.58	-.45	1.60	-.09	1.28	-.11	1.29	-.00	1.19	-.03	1.23
25	-.16	1.84	-.27	1.97	.01	1.67	-.19	1.88	-.04	1.72	.04	1.63

Complement means:

D3-50-v1

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.59	-.42	-.35	-.02	-.05	-.17	-.09	.00	-.54	-.25	-.26	-.01
2	-.70	-.50	-.17	.02	.03	.09	.00	.04	-.73	-.59	-.17	-.02
3	-.63	-.37	-.30	.04	-.04	-.07	.00	-.05	-.59	-.30	-.30	.09
4	-.55	-.41	-.29	.04	.06	.10	.14	.09	-.61	-.51	-.42	-.05
5	-.92	-.84	-.68	-.09	.08	-.06	-.08	.08	-1.00	-.79	-.60	-.18
6	-.76	-.51	-.43	.01	-.01	.02	.01	.16	-.75	-.54	-.44	-.15
7	-.70	-.49	-.27	-.13	.00	-.04	.02	.00	-.70	-.45	-.29	-.14
8	-.73	-.53	-.34	-.12	.07	.07	-.04	.05	-.80	-.60	-.30	-.17
9	-.49	-.39	-.24	.02	.00	.07	-.02	.14	-.49	-.46	-.22	-.11
10	-.44	-.20	-.07	.22	.14	.08	-.02	.08	-.58	-.28	-.06	.14
11	-.46	-.19	-.04	-.01	.06	.10	.17	-.06	-.52	-.29	-.22	.05
12	-.48	-.37	-.27	.08	.09	.14	.09	.17	-.57	-.51	-.36	-.10
13	-.60	-.52	-.28	-.20	-.14	-.08	-.02	-.12	-.47	-.44	-.25	-.08
14	-.49	-.19	-.24	.04	-.03	.02	-.07	.02	-.46	-.21	-.16	.02
15	-.78	-.72	-.21	-.13	-.13	-.06	-.05	-.01	-.64	-.66	-.16	-.12
16	-.78	-.48	-.32	-.24	.00	-.07	-.05	-.03	-.78	-.41	-.27	-.21
17	-.62	-.41	-.37	-.16	.12	.01	-.03	.00	-.74	-.42	-.34	-.16
18	-.58	-.41	-.21	-.02	-.19	-.08	.01	-.02	-.39	-.33	-.23	-.01
19	-.45	-.32	.02	-.08	-.06	.07	.15	-.03	-.39	-.40	-.13	-.04
20	-.67	-.43	-.42	-.06	.00	.13	-.10	-.11	-.66	-.56	-.32	.05
21	-.86	-.36	-.47	-.17	-.11	.06	.00	-.03	-.75	-.41	-.47	-.14
22	-.63	-.53	-.05	-.09	.00	.01	.05	-.09	-.63	-.53	-.10	-.01
23	-.25	-.09	.03	.09	-.01	.03	.06	.03	-.24	-.12	-.03	.06
24	-.77	-.48	-.33	-.20	-.01	.06	-.11	.06	-.77	-.54	-.22	-.26
25	-.55	-.32	-.12	-.02	.02	.01	.14	.10	-.57	-.33	-.25	-.12
mean:	-.62	-.42	-.26	-.05	.00	.02	.01	.02	-.61	-.44	-.26	-.07
SD:	.15	.16	.16	.11	.08	.08	.08	.08	.16	.15	.13	.10
								mean absolute error:	.61	.44	.26	.10
								SD:	.16	.15	.13	.07

Taxon means:

D3-50-v1

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	1.98	1.82	1.75	1.43	1.92	1.61	1.53	1.26	.06	.21	.22	.17
2	2.33	2.10	1.75	1.55	2.11	1.93	1.50	1.45	.22	.18	.24	.10
3	2.37	2.07	1.99	1.61	2.25	1.91	1.55	1.35	.12	.16	.45	.25
4	2.05	1.93	1.83	1.56	2.05	1.67	1.60	1.37	.00	.26	.23	.19
5	2.09	2.03	1.90	1.41	1.99	1.79	1.55	1.33	.11	.24	.35	.09
6	2.26	2.05	1.98	1.60	2.17	1.80	1.72	1.37	.09	.25	.27	.23
7	2.14	1.93	1.70	1.57	1.99	1.70	1.39	1.39	.15	.23	.32	.17
8	2.07	1.88	1.70	1.49	2.03	1.77	1.48	1.21	.04	.11	.22	.28
9	2.19	2.07	1.89	1.58	2.10	1.82	1.50	1.34	.10	.25	.40	.25
10	2.10	1.81	1.67	1.32	2.17	1.72	1.45	1.21	-.07	.09	.21	.11
11	2.34	2.04	1.87	1.84	2.01	1.82	1.55	1.14	.33	.22	.32	.70
12	1.94	1.83	1.73	1.40	1.95	1.73	1.39	1.19	-.01	.11	.35	.20
13	2.06	1.98	1.75	1.68	1.92	1.71	1.56	1.20	.14	.28	.19	.48
14	2.26	1.92	1.97	1.65	2.14	1.68	1.67	1.20	.12	.25	.31	.46
15	2.13	2.07	1.59	1.51	2.06	1.86	1.48	1.32	.07	.21	.11	.20
16	2.08	1.79	1.64	1.58	2.14	1.53	1.45	1.34	-.06	.26	.19	.23
17	2.19	1.95	1.91	1.68	2.01	1.82	1.47	1.37	.18	.13	.44	.31
18	2.25	2.04	1.81	1.58	2.00	1.70	1.40	1.21	.25	.34	.41	.37
19	2.12	1.99	1.66	1.75	2.05	1.85	1.56	1.18	.06	.14	.10	.57
20	2.36	2.05	2.04	1.58	2.12	1.81	1.42	1.14	.23	.23	.62	.44
21	1.94	1.56	1.65	1.41	1.93	1.57	1.47	1.18	.02	-.01	.18	.23
22	1.88	1.79	1.37	1.41	2.05	1.71	1.37	1.29	-.17	.08	.00	.12
23	1.93	1.75	1.61	1.55	1.87	1.69	1.48	1.24	.06	.06	.12	.30
24	1.90	1.64	1.49	1.38	1.94	1.79	1.35	1.39	-.04	-.15	.14	-.01
25	2.27	2.02	1.80	1.70	2.04	1.64	1.48	1.23	.22	.37	.32	.47
mean:	2.13	1.92	1.76	1.55	2.04	1.75	1.49	1.28	.09	.18	.27	.28
SD:	.15	.14	.16	.12	.09	.10	.09	.09	.11	.11	.13	.16
								mean absolute error:	.12	.19	.27	.28
								SD:	.08	.09	.13	.16

MAMBAC: Estimates of Means
Using FIRST and LAST abscissa intervals

D6-50-v1

```
          ---------------------------- output/input -------------------------------
            y/x           x/y           z/x           x/z           v/x           x/v
sample   comp   tax    comp   tax    comp   tax    comp   tax    comp   tax    comp   tax

   1     -.63  2.17    -.75  2.29    -.41  1.97    -.44  2.00     .22  1.39    -.21  1.79
   2     -.51  2.17    -.52  2.18    -.52  2.18    -.84  2.52     .01  1.63    -.36  2.02
   3     -.97  2.34    -.82  2.20    -.64  2.03    -.95  2.32    -.15  1.57    -.45  1.85
   4     -.50  2.00    -.78  2.28    -.75  2.25    -.94  2.44    -.24  1.75    -.47  1.98
   5     -.91  2.44    -.97  2.50    -.58  2.09   -1.00  2.53    -.30  1.79    -.55  2.06
   6     -.62  1.99    -.92  2.26    -.61  1.98   -1.11  2.43    -.30  1.69    -.50  1.87
   7     -.89  2.49    -.95  2.56    -.51  2.08    -.63  2.21     .11  1.42    -.21  1.77
   8     -.72  2.43    -.85  2.58    -.44  2.11    -.49  2.17    -.04  1.64    -.31  1.96
   9     -.93  2.61   -1.02  2.71    -.29  1.92    -.61  2.27     .03  1.57    -.52  2.16
  10     -.82  2.35    -.98  2.53    -.76  2.29    -.90  2.44     .17  1.29    -.35  1.85
  11     -.88  2.26   -1.03  2.39    -.70  2.11    -.94  2.31    -.46  1.90    -.55  1.98
  12     -.64  2.13   -1.09  2.56    -.78  2.26   -1.26  2.72    -.09  1.59    -.77  2.25
  13     -.91  2.12   -1.52  2.64    -.60  1.86    -.76  1.99    -.41  1.70    -.59  1.85
  14     -.64  2.11    -.88  2.34    -.56  2.03    -.80  2.27    -.14  1.62    -.61  2.08
  15     -.96  2.56    -.93  2.53    -.43  2.03    -.65  2.25    -.03  1.64    -.37  1.98
  16    -1.01  2.44    -.90  2.34    -.78  2.21    -.79  2.22    -.06  1.47    -.43  1.85
  17     -.90  2.78   -1.01  2.90    -.49  2.28    -.77  2.61     .20  1.46    -.12  1.85
  18     -.76  1.98   -1.09  2.25    -.53  1.79    -.98  2.16    -.44  1.71    -.44  1.71
  19     -.91  2.52   -1.03  2.65    -.62  2.21    -.92  2.53    -.25  1.81    -.34  1.91
  20     -.71  2.30    -.85  2.44    -.73  2.32    -.82  2.41    -.07  1.64    -.29  1.87
  21     -.64  2.52    -.64  2.52    -.22  2.03    -.51  2.36     .07  1.69    -.17  1.97
  22    -1.05  2.21    -.91  2.10    -.90  2.09    -.88  2.08    -.31  1.61    -.49  1.75
  23    -1.00  1.93   -1.26  2.11    -.57  1.63   -1.06  1.97    -.66  1.69    -.78  1.77
  24     -.75  2.39    -.86  2.51    -.39  2.01    -.57  2.20    -.22  1.82    -.56  2.18
  25     -.49  1.92    -.83  2.28    -.44  1.87    -.53  1.96    -.31  1.74    -.51  1.94
```

D6-50-v1

```
          ---------------------------- output/input -------------------------------
            z/y           y/z           v/y           y/v           v/z           z/v
sample   comp   tax    comp   tax    comp   tax    comp   tax    comp   tax    comp   tax

   1     -.54  2.09    -.44  2.00     .17  1.44    -.22  1.79     .27  1.34    -.03  1.62
   2     -.00  1.64    -.37  2.03    -.12  1.77    -.24  1.90    -.11  1.75    -.11  1.75
   3     -.35  1.75    -.68  2.07    -.19  1.60    -.32  1.73     .10  1.33    -.03  1.45
   4     -.53  2.03    -.71  2.21    -.20  1.71    -.52  2.03    -.04  1.56    -.20  1.71
   5     -.50  2.01    -.47  1.97    -.16  1.64    -.22  1.71     .19  1.28     .07  1.40
   6     -.41  1.79    -.77  2.13     .11  1.31    -.32  1.70    -.12  1.52     .07  1.35
   7     -.40  1.96    -.58  2.16     .21  1.32    -.11  1.66     .17  1.36    -.04  1.58
   8     -.22  1.85    -.49  2.17     .40  1.13     .04  1.55     .30  1.25    -.05  1.66
   9     -.39  2.02    -.47  2.11    -.06  1.66    -.17  1.79     .03  1.57    -.05  1.66
  10     -.58  2.10    -.50  2.00    -.04  1.52    -.15  1.63    -.23  1.72    -.13  1.61
  11     -.35  1.81    -.35  1.81    -.08  1.58    -.34  1.80    -.07  1.57     .15  1.38
  12     -.66  2.15    -.85  2.33     .12  1.39    -.34  1.84    -.07  1.57    -.50  1.99
  13     -.55  1.82    -.48  1.76    -.25  1.56    -.22  1.54    -.10  1.43    -.30  1.60
  14     -.22  1.70    -.60  2.07     .03  1.45    -.13  1.61     .12  1.37    -.13  1.61
  15     -.23  1.84    -.48  2.09     .08  1.54    -.03  1.64     .19  1.43     .21  1.41
  16     -.55  1.97    -.48  1.90    -.01  1.42    -.06  1.47    -.22  1.64    -.29  1.70
  17     -.31  2.07    -.30  2.05    -.13  1.85    -.20  1.93     .37  1.26     .12  1.56
  18     -.36  1.64    -.60  1.84     .02  1.33    -.34  1.62    -.29  1.58    -.01  1.35
  19     -.39  1.96    -.76  2.36     .04  1.50     .11  1.42    -.22  1.78    -.49  2.06
  20     -.24  1.81    -.33  1.91     .33  1.23    -.08  1.65     .07  1.50     .13  1.44
  21     -.25  2.06    -.35  2.18     .09  1.67    -.02  1.80     .36  1.36     .01  1.76
  22     -.69  1.92    -.85  2.05    -.37  1.65    -.46  1.73    -.22  1.54    -.12  1.45
  23     -.81  1.79    -.81  1.80     .06  1.19    -.49  1.57    -.14  1.33    -.47  1.55
  24     -.66  2.29    -.45  2.07     .02  1.56    -.30  1.90     .02  1.56    -.30  1.91
  25     -.21  1.64    -.40  1.83     .02  1.39    -.40  1.83     .19  1.22    -.18  1.60
```

Complement means:

D6-50-v1

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	-.47	-.43	-.33	.22	-.01	.07	.02	.09	-.45	-.50	-.35	.13
2	-.57	-.37	-.21	-.07	.03	.08	.06	.02	-.61	-.46	-.27	-.09
3	-.74	-.66	-.34	-.08	-.07	-.02	.03	-.04	-.67	-.64	-.37	-.04
4	-.73	-.58	-.49	-.16	.14	.10	-.02	.00	-.87	-.68	-.47	-.16
5	-.84	-.53	-.34	-.09	.00	-.04	.03	.12	-.84	-.49	-.37	-.21
6	-.84	-.57	-.32	-.10	-.02	.02	.02	-.02	-.82	-.59	-.33	-.09
7	-.60	-.52	-.31	.16	-.04	.00	.01	.03	-.55	-.52	-.32	.13
8	-.55	-.39	-.24	.22	.09	.00	-.02	.23	-.64	-.39	-.21	-.01
9	-.71	-.52	-.24	.00	-.01	-.05	-.04	.02	-.71	-.47	-.20	-.02
10	-.75	-.49	-.49	-.04	-.06	.04	-.12	-.05	-.69	-.53	-.37	.02
11	-.84	-.52	-.30	-.20	-.06	-.11	.09	-.01	-.78	-.41	-.39	-.19
12	-1.04	-.61	-.65	-.02	.00	.02	.00	.03	-1.03	-.63	-.65	-.05
13	-.95	-.54	-.48	-.25	.03	.10	-.02	.06	-.98	-.64	-.46	-.31
14	-.76	-.46	-.30	.00	.12	.13	.02	-.06	-.88	-.59	-.32	.06
15	-.65	-.49	-.15	.08	.05	.01	.04	.05	-.70	-.50	-.19	.03
16	-.71	-.51	-.54	-.10	-.01	-.02	-.12	-.03	-.70	-.50	-.42	-.07
17	-.63	-.46	-.23	.15	-.11	-.04	-.04	.01	-.52	-.42	-.18	.14
18	-.84	-.57	-.30	-.24	.00	.02	-.03	.07	-.84	-.58	-.27	-.31
19	-.76	-.52	-.50	-.14	.00	-.04	-.05	-.02	-.76	-.48	-.45	-.13
20	-.65	-.37	-.28	.11	.01	.00	.02	.12	-.67	-.37	-.30	-.01
21	-.44	-.34	-.15	.17	-.10	.02	-.02	.08	-.35	-.36	-.13	.09
22	-.76	-.79	-.57	-.30	.00	-.03	.08	-.05	-.76	-.76	-.65	-.25
23	-1.04	-.77	-.61	-.25	-.10	.04	.03	-.07	-.93	-.81	-.64	-.18
24	-.66	-.50	-.45	-.06	-.06	.02	-.06	.02	-.61	-.52	-.40	-.07
25	-.62	-.43	-.28	-.03	.00	.11	-.03	.01	-.62	-.54	-.25	-.04
mean:	-.73	-.52	-.36	-.04	-.01	.02	.00	.02	-.72	-.54	-.36	-.07
SD:	.15	.11	.14	.15	.06	.06	.05	.07	.16	.11	.14	.13
mean absolute error:									.72	.54	.36	.11
SD:									.16	.11	.14	.09

Taxon means:

D6-50-v1

	Pooled estimates				True means				Algebraic error			
sample	x	y	z	v	x	y	z	v	x	y	z	v
1	2.02	1.99	1.90	1.39	2.01	1.80	1.64	1.30	.02	.19	.26	.09
2	2.24	2.03	1.86	1.72	1.99	1.80	1.54	1.26	.25	.23	.32	.45
3	2.12	2.04	1.74	1.50	2.00	1.77	1.43	1.31	.12	.28	.31	.18
4	2.23	2.08	2.00	1.67	2.07	1.69	1.56	1.17	.16	.39	.44	.50
5	2.37	2.04	1.83	1.57	1.99	1.84	1.40	1.34	.38	.20	.43	.23
6	2.19	1.94	1.71	1.51	2.03	1.84	1.46	1.26	.15	.10	.24	.25
7	2.18	2.10	1.87	1.37	1.98	1.81	1.48	1.28	.20	.29	.39	.09
8	2.24	2.05	1.87	1.34	1.99	1.76	1.49	1.18	.24	.29	.38	.16
9	2.38	2.17	1.87	1.60	2.04	1.80	1.57	1.24	.34	.37	.29	.36
10	2.27	2.00	2.00	1.51	1.98	1.71	1.54	1.30	.29	.28	.46	.21
11	2.23	1.95	1.77	1.68	2.04	1.84	1.53	1.26	.19	.12	.24	.42
12	2.51	2.10	2.13	1.52	2.04	1.78	1.53	1.34	.47	.32	.60	.18
13	2.16	1.81	1.76	1.56	2.00	1.65	1.48	1.33	.16	.16	.28	.24
14	2.23	1.93	1.78	1.48	1.94	1.74	1.48	1.23	.28	.19	.30	.25
15	2.25	2.10	1.76	1.53	2.07	1.83	1.58	1.32	.19	.27	.18	.22
16	2.14	1.94	1.96	1.51	2.10	1.93	1.51	1.24	.04	.00	.45	.27
17	2.45	2.25	1.97	1.52	2.02	1.71	1.59	1.17	.44	.54	.38	.35
18	2.04	1.81	1.59	1.54	2.04	1.68	1.50	1.33	.00	.13	.10	.22
19	2.36	2.10	2.08	1.70	1.98	1.78	1.54	1.27	.38	.32	.54	.43
20	2.24	1.95	1.86	1.46	2.08	1.80	1.53	1.28	.16	.15	.33	.18
21	2.28	2.16	1.95	1.57	2.01	1.82	1.66	1.24	.27	.34	.29	.33
22	1.98	2.00	1.82	1.60	1.94	1.77	1.41	1.33	.03	.23	.41	.27
23	1.95	1.76	1.66	1.40	2.03	1.81	1.43	1.37	-.08	-.05	.23	.04
24	2.30	2.12	2.07	1.65	1.92	1.72	1.59	1.16	.38	.39	.48	.48
25	2.06	1.86	1.71	1.45	1.97	1.78	1.42	1.23	.09	.08	.29	.22
mean:	2.22	2.01	1.86	1.53	2.01	1.78	1.52	1.27	.21	.23	.34	.26
SD:	.14	.12	.13	.10	.04	.06	.07	.06	.14	.13	.11	.12
mean absolute error:									.21	.24	.34	.26
SD:									.13	.12	.11	.12

APPENDIX J

ESTIMATES OF "COMPLEMENT AND TAXON MEANS" FROM NONTAXONIC SAMPLES

POOLED ESTIMATES OF "COMPLEMENT AND TAXON MEANS" (USING ABSCISSA CUTS) OVER 25 SAMPLES FOR NONTAXONIC SAMPLES

Sample Configuration[1]	r_{ij}	N	Estimates of															
			"complement means"								"taxon means"							
			x	*SD*	y	*SD*	z	*SD*	v	*SD*	x	*SD*	y	*SD*	z	*SD*	v	*SD*
E300	.26	300	– .50	.14	– .51	.12	– .51	.13	– .53	.14	.48	.14	.50	.13	.49	.13	.51	.12
E600	.26	600	– .57	.13	– .59	.13	– .58	.12	– .58	.10	.56	.12	.58	.11	.57	.12	.58	.11
B300	.36	300	– .67	.13	– .69	.14	– .69	.15	– .70	.14	.69	.16	.71	.15	.71	.16	.72	.17
B600	.36	600	– .78	.09	– .83	.10	– .77	.10	– .78	.09	.84	.12	.89	.09	.82	.12	.84	.12
F300	.44	300	– .85	.13	– .82	.10	– .85	.16	– .83	.13	.86	.14	.84	.14	.86	.15	.84	.12
F600	.44	600	– .93	.11	– .89	.12	– .91	.13	– .89	.12	.99	.14	.94	.12	.97	.14	.95	.11
C100	.50	100	– .74	.16	– .74	.15	– .72	.17	– .73	.15	.72	.12	.73	.12	.71	.14	.72	.15
C200	.50	200	– .84	.15	– .86	.15	– .85	.14	– .86	.14	.93	.14	.95	.15	.96	.16	.95	.14
C300	.50	300	– .94	.12	– .92	.13	– .97	.14	– .95	.12	.97	.15	.95	.15	1.00	.17	.98	.15
C600	.50	600	–1.06	.12	–1.06	.14	–1.07	.12	–1.06	.11	1.15	.13	1.15	.13	1.16	.11	1.14	.13
N300	$r_{xy} = .68$ $r_{yz} = .60$ $r_{xz} = .64$ $r_{yv} = .55$ $r_{xv} = .57$ $r_{zv} = .54$	300	–1.17	.14	–1.15	.16	–1.12	.15	–1.03	.12	1.19	.15	1.17	.15	1.14	.14	1.05	.14
N600	correlations same as for N300	600	–1.30	.14	–1.28	.16	–1.22	.13	–1.12	.13	1.44	.12	1.41	.13	1.35	.14	1.25	.14
D300	$r_{xy} = .65$ $r_{yz} = .52$ $r_{xz} = .58$ $r_{yv} = .41$ $r_{xv} = .46$ $r_{zv} = .37$	300	–1.10	.17	–1.02	.17	– .95	.15	– .80	.16	1.08	.11	1.00	.12	.93	.12	.79	.17
D600	correlations same as for D300	600	–1.20	.10	–1.13	.10	–1.04	.10	– .92	.10	1.23	.17	1.16	.16	1.07	.15	.95	.16

[1] The letter is the authors' code for the configuration of factor loadings used to produce the desired r_{ij}; the number part indicates sample size.