Bayesian Analysis (2013) **8**, Number 2, pp. 303–310

Comment on Article by Müller and Mitra

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Congratulations to the authors on a fine and comprehensive review of nonparametric Bayesian (BNP, or NPB?) inference! The authors offer a whirlwind review of an enormous field that has seen explosive growth since the advent of MCMC methods for Bayesian computing; indeed, the two fields rose to prominence simultaneously around 1990, and enjoyed substantial cross-pollination (see Escobar and West, 1998, for a review). One of us (BPC) admits to being somewhat surprised to be asked to serve as a discussant for this paper, since if he has any professional reputation at all, it is that of an unapologetic Bayesian parametrician who prefers `BUGS` implementions, with theoretical properties simulated via repeated calls from `R` using `BRugs` or `rjags`. But the editors insisted this is precisely what they were looking for, and after reading the paper we agree with them: this is a very nice paper that is in need of a crabby parametrician or two to fuss about its breezy claims of heretofore-unimagined modeling freedom and insight, especially when there is often relatively modest payoff for the effort expended. As such, our outlook here is like an asymptotician's wary view of the Gibbs sampler in 1990, or any frequentist's view of the phrase "applied Bayesian statistics" before 1980. While the progressive Gibbs-applied viewpoint prevailed in both those cases, the other ideas hardly vanished; asymptotic approximations are even cool again thanks to the emergence of the `INLA` package (c.f. Rue et al., 2009). Thus we hope the reader will grant us our slightly peevish, "you-kids-get-off-my-lawn" tone so that we may fulfill our Prof. Cranky Pants role, as the editors (and we) believe we must.

BNP is of course all about flexibility; in their very first paragraph, the authors speak glowingly of "allowing for a richer and larger class of models." Indeed this has been a central theme of all Bayesian modeling since 1990, so publishing this in *Bayesian Analysis* is preaching to the choir to be sure (and what a choir; the authors' reference list is long and only scratches the BNP surface). But the ways in which this flexibility manifests are sometimes mysterious, and other times easily mimicked by a carefully considered yet much simpler parametric model. Later in their introduction, the authors worry that, "Restriction to a parametric family can mislead investigators into an inappropriate illusion of posterior certainty." In our admittedly limited experience, a much more common problem in Bayesian modeling is accidental *over*-parametrization of a previously-understood model, resulting in poor identifiability and associated slow MCMC convergence. Indeed, the recent explosion in BNP research has led to the publication of a few BNP models before their utility had been established for even a single real dataset. In our opinion, mere flexibility for flexibility's sake is not enough; the flexibility must be both well-understood and routinely controlled. In this regard, we were puzzled by the authors' Figure 2(a), which overlays their BNP results with arguably the world's most popular nonparametric estimator, the Kaplan-Meier empirical survival curve. The former are a poor match to the latter for $Y > 2.5$, but this discrepancy is

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 DOI:10.1214/13-BA811A