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Track	Peer-reviewed Papers
Paper ID	65
Title	An Alternative Prior Process for Nonparametric Bayesian Clustering

	Question	Response
1	Author Feedback	**R1: We've worked with several applications with a natural temporal ordering. We've not yet used the UP to model data where the ordering is known, but even our patent data has a latent temporal ordering. One can see the UP generative model capturing the development of new clusters of patents (e.g., spawned by the discovery of the buckyball) so long as the probability mass is at any time evenly spread across existing clusters. Yes the dependence of the phis is quite weak. We will include discussion of Pitman (1996).** **R2: We agree that without exchangeability order matters. We do not intend to minimize this and we are careful to present an inference method that correctly handles this order-dependence. Our framing of exchangeability as a modeling/data assumption is intended to convey that although exchangeability is a generally desired property, exchangeable nonparametric clustering models can't avoid the property of preferential allocation. Certainly, there are many situations where preferential allocation is reasonable. But in other applications this effect is disadvantageous. In some applications, there exists a known ordering, in which case the lack of exchangeability implied by the UP is not an issue. Indeed, there are many data sets which have orderings, but for which the exchangeability assumption is made routinely, such as news articles. Where the ordering is unknown, it is possible to marginalize over orderings.** **R3: Thanks for the technical notes. If accepted, we will also include a comparison to the PYP in the final version. We appreciate your suggestion to add a permutation step to the MCMC algorithm, it's a great idea and we're presently working on it. We're also exploring potential connections to dependent nonparametric processes for future work. The beta concentration parameters are slice sampled (see [19]) at training time and then fixed at test time. We believe your Green ref. is "Modelling heterogeneity with and without the Dirichlet process" which is discussed in [7] but we will cite directly.**