

This paper develops a hybrid likelihood (HL) method based on a compromise between parametric and nonparametric likelihoods. Consider the setting of a parametric model for the distribution of an observation Y with parameter θ . Suppose there is also an estimating function $m(\cdot, \mu)$ identifying another parameter μ via $E m(Y, \mu) = 0$, at the outset defined independently of the parametric model. To borrow strength from the parametric model while obtaining a degree of robustness from the empirical likelihood method, we formulate inference about θ in terms of the hybrid likelihood function $H_n(\theta) = L_n(\theta)^{1-a} R_n(\mu(\theta))^a$. Here $a \in [0, 1)$ represents the extent of the compromise, L_n is the ordinary parametric likelihood for θ , R_n is the empirical likelihood function, and μ is considered through the lens of the parametric model. We establish asymptotic normality of the corresponding HL estimator and a version of the Wilks theorem. We also examine extensions of these results under misspecification of the parametric model, and propose methods for selecting the balance parameter a .