

Fully Conditional Specification: Past, present and beyond

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Two traditions have emerged for drawing multiple imputations in multivariate missing data. The *joint modeling* approach specifies a multivariate distribution of the missing data, whereas *fully conditional specification* (FCS, or *chained equations*, *sequential regression*) requires a specification of each conditional distribution. The lecture highlights how FCS combines algorithmic elements of the NORM method with the philosophy of the French tradition of *L'analyse de Donnees*. The result is a highly flexible methodology for creating imputations that stay close to the data, but that also lead to valid statistical inferences for a wide variety of complete-data estimates. I will discuss strong and weak points of the approach, open problems in current FCS, and future applications, such as estimating the individual causal effect (ICE), i.e., the answer to the question “What will this intervention do for this person at this time?”