1046-U1-1771 **Stacy A Brown*** (stacy_brown@pitzer.edu), 3326 Duke Avenue, Claremont, CA 91711. *A Multiage Examination of Students' Approaches to Mathematical Induction Tasks.*

Research on undergraduates' understandings of proof by mathematical induction (PMI) has shown that undergraduates experience difficulty with this proof technique (e.g., Dubinsky, 1989; Movshovitz-Hadar, 1993). Harel and Sowder (1998) and others (Brown, 2003), however, have questioned the extent to which these difficulties are due to traditional instructional approaches that tend to hastily introduce the definition of mathematical induction and do not facilitate the development of PMI as a means to solve a class of problems. In an effort to distinguish between those difficulties that are didactical in nature (that is, due to instructional choices) and those that are epistemological (that is, whose origin is the concept itself), this paper will examine findings from two teaching experiments. The first involved undergraduate mathematics and science majors. The second is ongoing and involves advanced 6th grade students. The purpose of the paper is to explore similarities and differences in the students' approaches to PMI-appropriate tasks and then to use the multi-age comparison to evaluate potential epistemological obstacles to PMI. (Received September 16, 2008)