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Eun Jung* (eunjung@uga.edu), 102 College Station Rd. F204, Athens, GA 30605. *Connecting Multiplication, Fractions, and Equations*. Preliminary report.

The present study examines how six future secondary mathematics teachers reason fractions abstractly and quantitatively when they are confused about in confusing the roles of quantities and operators, particularly as they try to create abstract representations of equations. The future teachers were enrolled in mathematics content courses that relied on an explicit, quantitative meaning for multiplication to connect core topics in the multiplicative conceptual field. This report focuses on preservice math teachers' fractional knowledge, analyzing data from task-based clinical interviews designed to investigate participants' figurative and operative reasoning in solving fraction multiplication problems with an unknown multiplier or multiplicand. The main finding is we report is that the future teachers interpreted fractional numbers as operators on magnitude X units in various ways, some of which facilitates the process of representing and producing proportional relationships and linear equations. There are significant gaps for many pre-service teachers around fractions' distinct roles as either quantities or operators. Without grasping this distinction, new teachers will have difficulty implementing standards that require a nuanced approach to teaching fractional concepts. (Received September 20, 2016)