

# **MONOTONICITY, HEADEDNESS, AND REVERSIBLE GRAMMAR**

**Martin Kay  
Xerox Palo Alto Research Center  
3333 Coyote Hill Road  
Palo Alto, CA 94304**

## **ABSTRACT**

The notion of reversibility that is salient for grammars rests on the idea that grammars are transducers between strings of words and some more abstract meaning representation. The grammar is reversible if the transducer will work in both directions. The notion was important in driving the evolution from procedural grammar formalisms, like ATN, to declarative formalisms, like LFG and HPSG. The key was to replace the setting of registers with the unification of logical variables. The aim was to base grammars entirely on 'monotonic' operations. An issue has arisen more recently has to do with the various notions of 'head of a construction'. After an attempt to place reversible grammars in their historical perspective, I will discuss the relation between monotonicity and headedness.