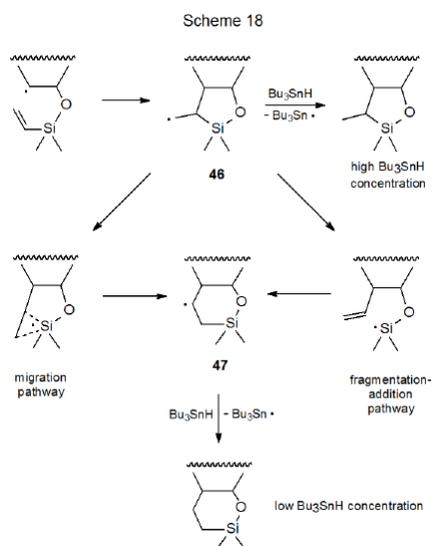
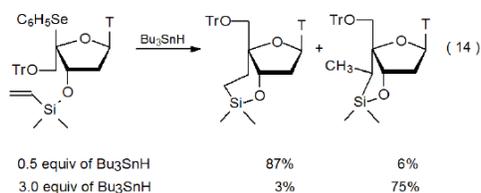


## VII. Silyl Ether Rearrangement

Rearrangement takes place during radical cyclization involving some silyl ethers. The primary evidence for this rearrangement is the dependence of product ring size on the concentration of  $\text{Bu}_3\text{SnH}$ , the hydrogen-atom transfer in these reactions. When the reaction shown in eq 14 is conducted in dilute  $\text{Bu}_3\text{SnH}$  solution, the major product contains a six-membered ring,<sup>35</sup> but at high  $\text{Bu}_3\text{SnH}$  concentration reaction regioselectivity changes to give a product with a five-membered ring.<sup>36,37</sup> This concentration dependence can be explained by the more rapidly formed, but less stable, radical **46** having sufficient time and energy, when the concentration of  $\text{Bu}_3\text{SnH}$  is low, to be converted into the more stable radical **47**, either by a rearrangement that involves a cyclic transition state or by a fragmentation-addition sequence (Scheme 18).<sup>37</sup> At high  $\text{Bu}_3\text{SnH}$  concentration hydrogen-atom abstraction occurs before ring expansion can take place.



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