Construction of a Tetrafluoroethylene-Bridging Structure via Carbocupration

**Significance:** The authors report the synthesis, characterization, and synthetic application of 2-aryl-1,1,2,2-tetrafluoroethylcopper complexes. Starting with a carbocupration of tetrafluoroethylene (TFE), a variety of 1,2-difunctionalized 1,1,2,2-tetrafluoroethanes were prepared in high yields.

**Comment:** The molecular structure of the aryl–TFE-copper species was determined by X-ray crystallography and NMR analysis. Furthermore, the synthetic utility for liquid-crystalline compounds bearing a tetrafluoroethylene-bridging structure was demonstrated.

**Selected examples:**

- (PhF)₂F
  - 97% yield
- (PhF)₂CHO
  - 99% yield
- (PhF)₂NH₂
  - 95% yield
- (PhF)₂
  - 97% yield
- (PhF)₂
  - 92% yield
- (PhF)₂
  - 90% yield
- (PhF)₂
  - 94% yield
- (PhF)₂
  - 98% yield

**Synthesis of a liquid-crystalline compound:**

64% yield over 6 steps