1067-37-31 **Gregory A Kelsey*** (gkelsey2@illinois.edu), 300 S. Goodwin Ave., Apt. 609, Urbana, IL 61801. *Mapping Schemes Realizable by Obstructed Topological Polynomials.*

In 1985, Levy used a theorem of Berstein to prove that all hyperbolic topological polynomials are equivalent to complex polynomials. We prove a partial converse to the Berstein-Levy Theorem: given post-critical dynamics that are, in a sense, strongly non-hyperbolic, we prove the existence of topological polynomials realizing these post-critical dynamics which are not equivalent to any complex polynomial. This proof employs the theory of self-similar groups to demonstrate that a topological polynomial admits an obstruction, and produces a wealth of examples of obstructed topological polynomials. (Received June 06, 2010)