1058-08-15 **Joel Berman***, Department of Mathematics, University of Illinois at Chicago, 851 S. Morgan Street, Chicago, IL 60607. *Pattern operations, strict pattern operations, and varieties.* Preliminary report.

For α an equivalence relation on $\{1, ..., n\}$, for $\bar{a} \in A^n$, and $1 \leq k \leq n$ we say $\bar{a}$ has an *α-pattern* if $(i, j) \in \alpha$ implies $a_i = a_j$ and we call (α, k) a *pattern pair*. For $f : A^n \to A$ and Γ a set of pattern pairs, f is a *Γ-pattern operation* if $f(\bar{a}) = a_k$ whenever $\bar{a} \in A^n$ has an α-pattern for an $(\alpha, k) \in \Gamma$.

A set Γ of pattern pairs is *consistent* if at least one Γ-pattern operation exists. A *strict pattern operation* is defined analogously starting from the definition $\bar{a} \in A^n$ has a *strict α-pattern* precisely if $(i, j) \in \alpha$ iff $a_i = a_j$.

Familiar examples of pattern operations include n-ary near-unanimity operations and Mal'cev operations; examples of strict pattern operations are discriminator and dual-discriminator operations.

For a variety $\mathcal{V}$ generated by a set K of algebras, we investigate conditions on K and $\mathcal{V}$ that guarantee for a given n, for every consistent set Γ of [strict] pattern pairs there exists a term t_Γ for which $t_\Gamma^{\mathbf{A}}$ is a [strict] Γ-pattern operation for all $\mathbf{A} \in K$. (Received November 30, 2009)