1077-91-133 **Marcus J Pivato*** (marcuspivato@gmail.com), Department of Mathematics, Trent University, 1600 West Bank Drive, Peterborough, Ontario K9J 7B8, Canada. *Variable-population voting rules.*

Let $X$ be a set of social alternatives. Let $V$ be a set of 'signals'. A *variable population voting rule* $F$ takes any number of anonymous votes drawn from $V$ as input, and produces a nonempty subset of $X$ as output. For example, let $R$ be a linearly ordered abelian group (e.g. $\mathbb{R}$). In an *$R$-valued scoring rule*, each vote in $V$ assigns an $R$-valued 'score' to each alternative in $X$. We add up the scores of each alternative over all votes in the profile, and select the alternative(s) with the highest aggregate score. An *$R$-valued balance rule* is similar, but now an $R$-valued scoring rule is used to decide each two-way race; we select the alternative(s) which beat or tie every other alternative. $F$ satisfies *reinforcement* if, whenever two disjoint sets of voters each select some subset $Y \subseteq X$, the union of these two sets will also select $Y$. We show that $F$ satisfies reinforcement iff $F$ is a balance rule. If $F$ satisfies a form of neutrality, then $F$ is satisfies reinforcement iff $F$ is a scoring rule; this generalizes a result of Myerson (1995). We discuss the uniqueness of these representations. Finally, we axiomatically characterize two scoring rules: *formally utilitarian* voting and *range voting*. (Received July 28, 2011)