Inspired upon `http://bair.berkeley.edu/blog/2018/05/17/delayed-impact/`

There are K classes. For example, these might be K different choices for races, sexual orientations, religions or combinations thereof. There are $P \leq K$ policies that are being applied. For example, these could be a bank decides to give you a credit limit of either none, something between $1000 - 2000$, $2000 - 3000$ etc.

To test if there is some discrimination, we group the K classes into P by doing some set partition. This then gives a P by P confusion matrix. But the labels for the rows and columns are different so rather than calculate Matthews correlation coefficient directly, we permute over S_P that tells which policy goes with which group of protected classes.

0.1 Definition (MCC Multiclass) *https://en.wikipedia.org/wiki/Matthews_correlation_coefficient*

The goal is to find the function from this set of K to the set of P so that the resulting multiclass MCC for the P by P confusion matrix is maximized.