The pacf is necessary for distinguishing between

Top of Form

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|  | a) | An AR and an MA model |
|  | b) | An AR and an ARMA model |
|  | c) | An MA and an ARMA model |
|  | d) | Different models from within the ARMA family |

Bottom of Form

Incorrect! The pacf is not required to distinguish between an AR and an MA process. This can be achieved using the acf, since the AR(p) will have a geometrically declining acf while the MA(q) will have an acf that truncates after q lags. Similarly, the acf is all that is required to distinguish between an ARMA(p,q) and an MA(q) process , since the ARMA(p,q) will have a geometrically declining acf while the MA(q) will have an acf that truncates after q lags. It would be very difficult to use either the acf or the pacf to distinguish between models from within the ARMA(p,q) family since any values of p and q of at least one would lead to geometrically declining acf and pacf. So the most important use of the pacf is in distinguishing between AR(p) and ARMA processes, since for the former, the pacf would be zero after p lags while for the latter the decline in the pacf would be geometric.

Tutorial:

<https://rstudio-pubs-static.s3.amazonaws.com/382326_d93ea43edf0f4955b2d58d28b0de7925.html>

<https://online.stat.psu.edu/stat501/lesson/14/14.5/14.5.1>

Questions:

<http://fisher.utstat.utoronto.ca/~mahinda/stad57/>