ERRATUM

McGee, Victor E. (1986). The OWL: Software support for a model of argumentation. *Behavior Research Methods, Instruments, & Computers*, 18(2), 108-117. This paper concludes with an Appendix showing four sample runs of the OWL program. A fifth sample run, referred to in the paper, was inadvertently omitted. It is reproduced here to complete the paper.

SAMPLE RUN 5 : Using OWL for Personal Study of Transfer Functions

Note: This is a run of the 1985 menu-driven OWL.

OWL (compiled) 28 Nov 85 14:44

Enter the TOPIC you want to deal with (or type ? for HELP) ? TF

What is your NAME and AFFILIATION ? STUDENT OF FORECASTING

```
* MAIN MENU
      OWL's MEMORY
      *****
      * S (Search) *
      *             *
I (Input)  * E (Edit) *   O (Output)
=====> *             *   =====>
      *****

or you can ask for   H (Help)
                    or   Q (Quit)
```

Choose a letter from S H O E or I Q ? S :: choose Search

```
** The SEARCH MENU is as follows:
=====
F (Find a text item)      H (Help)
L (Lookup a numbered item) Q (Quit)
E (get Evidence)
A (Analyze a term)
```

Input one of the letters in F L E A or H Q ? L :: choose Lookup

```
*** The LOOKUP MENU : searching by number codes
=====
T (Term)                 H (Help)
R (Reference)            Q (Quit)
A (Assertion)
D (Definition)
E (Evidence)
```

Input one of the letters in T R A D E or H Q ? T :: lookup a term
Input a TERM no. (hit return for complete listing)? :: hit return

List of Terms for TF
(T1) TIME SERIES DATA
(T2) INPUT SERIES
(T3) OUTPUT SERIES
(T4) PREWHITEN
(T5) AUTOCORRELATION
(T6) PARTIAL AUTOCORRELATION
(T7) PERIODOGRAM
(T8) LINE SPECTRUM
(T9) CROSS CORRELATION
(T10) STATISTICAL MODEL
(T11) IMPULSE RESPONSE WEIGHTS
(T12) TRANSFER FUNCTION MODELLING
(T13) BACKWARD SHIFT OPERATOR
(T14) ARIMA MODEL
(T15) STATIONARITY
(T16) NON-STATIONARITY
(T17) TF(R,S,B)
(T18) MARQUARDT ALGORITHM
(T19) BOX-JENKINS MODELLING
(T20) IDENTIFICATION
(T21) ESTIMATION
(T22) DIAGNOSTIC CHECKING
(T23) FORECASTING
(T24) CORRELATION
(T25) COVARIANCE

```
*** The LOOKUP MENU : searching by number codes
=====
T (Term)                 H (Help)
R (Reference)            Q (Quit)
A (Assertion)
D (Definition)
E (Evidence)
```

Input one of the letters in T R A D E or H Q ? Q F PREWHITEN
:: note that choices can
:: be put on one line
:: Q returns to the Search
The following terms were found
(T4) PREWHITEN :: menu and F is to find
:: the text PREWHITEN

Definitions
(T4),(R1) PREWHITEN

A WHITE NOISE SERIES IS THE RESULT OF A RANDOM GENERATION PROCESS - E.G., IF THERE IS NO IDENTIFIABLE PATTERN LEFT IN THE RESIDUALS, THEN THE RESIDUALS MAY BE CALLED 'WHITE NOISE'. GIVEN A TIME SERIES, X(T), IT CAN BE CONVERTED INTO WHITE NOISE BY REMOVING THE IDENTIFIABLE PATTERN. THIS IS CALLED PREWHITENING THE SERIES.
...SEE TRANSFER FUNCTION MODELLING

Assertions
No assertions were found.

** The SEARCH MENU is as follows:

```
=====
F (Find a text item)      H (Help)
L (Lookup a numbered item) Q (Quit)
E (get Evidence)
A (Analyze a term)
```

Input one of the letters in F L E A or H Q ? F TRANSFER FUNCTION

The following terms were found
(T12) TRANSFER FUNCTION MODELLING
Definitions

(T12),(R1) TRANSFER FUNCTION MODELLING
A TRANSFER FUNCTION (TF) MODEL CAN BE WRITTEN IN 3 WAYS:
(1) $Y(T) = V_0 * X(T) + V_1 * X(T-1) + V_2 * X(T-2) + \dots + N(T)$
WHERE N(T) IS A NOISE SERIES
(2) $Y(T) = [\Omega(B)/\Delta(B)] * X(T-B) + N(T)$

WHERE $\Omega(B) = W_0 - W_1 * B - W_2 * B^2 - \dots - W_S * B^S$

$\Delta(B) = 1 - D_1 * B - D_2 * B^2 - \dots - D_R * B^R$

NOTE : IN THE SUBSCRIPT (T-B) FOR X THE B REFERS TO TIME.
ALL OTHER USES OF B REFER TO THE BACKWARD SHIFT OPERATOR, AS FOLLOWS:
 $B * X(T) = X(T-1)$

(3) IF THE SECOND FORM ABOVE IS EXPANDED IT TAKES ON THE LOOKS OF FORECASTING EQUATION, WHERE Y(T) IS EXPRESSED AS A FUNCTION OF PREVIOUS Y() VALUES, PREVIOUS X() VALUES, AND NOISE.

THE STAGES IN TRANSFER FUNCTION MODELLING ARE:

- (1) IDENTIFICATION
 - 1-1 PREPARE INPUT & OUTPUT SERIES
 - 1-2 PREWHITEN THE INPUT SERIES
 - 1-3 'PREWHITEN' THE OUTPUT SERIES
 - 1-4 COMPUTE CROSS-CORRELATIONS & AUTOS FOR PREWHITENED SERIES
 - 1-5 ESTIMATE IMPULSE RESPONSE WEIGHTS DIRECTLY
 - 1-6 CHOOSE R,S,B IN TF(R,S,B)
 - 1-7 ESTIMATE THE NOISE SERIES N(T)
 - 1-8 CHOOSE PN,QN FOR ARIMA(PN,O,QN) NOISE MODEL
- (2) ESTIMATION OF PARAMETERS
 - 2-1 PRELIMINARY ESTIMATION
 - 2-2 FINAL ESTIMATES FROM MARQUARDT ALGORITHM
- (3) DIAGNOSTIC CHECKING
 - 3-1 COMPUTE AUTOS FOR RESIDUALS OF TF(R,S,B) MODEL
 - 3-2 COMPUTE CROSS-CORRELATIONS BETWEEN PREWHITENED INPUT SERIES AND RESIDUALS OF TF(R,S,B) MODEL
- (4) FORECASTING

** The SEARCH MENU is as follows:

```
=====
F (Find a text item)      H (Help)
L (Lookup a numbered item) Q (Quit)
E (get Evidence)
A (Analyze a term)
```

Input one of the letters in F L E A or H Q ? F TF(R,S,B)

The following terms were found
(T17) TF(R,S,B)

Definitions
(T17),(R1) TF(R,S,B)
THIS IS THE SHORTHAND NOTATION FOR A TRANSFER FUNCTION MODEL WITH PARAMETERS R, S AND B, WHERE
B = ABSOLUTE DELAY IN IMPACT OF X(T) ON Y(T)
S = THE LARGEST LAG ON X(T-S) WHICH AFFECTS Y(T)
R = THE LARGEST LAG ON Y(T-R) WHICH AFFECTS Y(T)
B = INDICATES THE FIRST X(T-B) WHICH AFFECTS Y(T)
IN THE EQUATION FOR THE TRANSFER FUNCTION.
...SEE TRANSFER FUNCTION MODELLING

** The SEARCH MENU is as follows:

=====

F (Find a text item)	H (Help)
L (Lookup a numbered item)	Q (Quit)
E (get Evidence)	
A (Analyze a term)	

Input one of the letters in F L E A or H Q ? Q Q :: quit twice
 :: to finish

That's it for this session. Thanks for trying the OWL.

The OWL has been applied in many areas, including:

1. Fiscal policy in the state of NH
 2. Personal memo-keeping
 3. Studying Reaganomics
 4. Health Care
 5. Excellence in Education
 6. A Forecasting Course
 7. Thinking through a Ph.D. thesis topic
- ... etc ...

Please let me know if you've found an interesting application for OWL.