1. Setting the Stage for my Comments

I agree with Wheeler that:

1. we should relax our requirements on the relationship between the propositions and the reports.

Because

- we do not always get the information from independent information sources and
- we also want to judge the coherence of information sets containing propositions for which we did not receive any reports (i.e. inferential beliefs).
Wheeler changes our focus from: the justification of beliefs with the help of testimonial reports to: the assessment of hypotheses in the light of the evidence (perhaps with the justification of beliefs as a special instance).

Wheeler defines the confirmation of the hypothesis $H$ by the evidence $E$, $c(H,E)$, as follows:

$$c(H,E) := \frac{p(H \land E)}{p(H)} \times \frac{p(E)}{p(H \land E)} = Coh(H,E)$$

Thus, confirmation is correlation, i.e. coherence.

According to Wheeler the relationship between confirmation and focused correlation is the following:

$$c(H, E_1 \land ... \land E_n) = \prod_{i \leq n} Coh(H, E_i) \times For_H(E_i, ..., E_n)$$

Wheeler’s interpretation of $For_H$:

"The focused correlation of $A$ and $B$ relative to a hypothesis $h$ [...] tells us what impact there is on the confirmation of $h$, if any at all, from combining $A$ and $B."$ (Wheeler (2008), p. 11)

A better interpretation: Focused correlation tells us how much a hypothesis increases the coherence of the evidence.

Confirmation depends on three factors:

1. $\prod_{i \leq n} Coh(H, E_i)$
2. $Coh(E_1, ..., E_n|H)$ (the conditional coherence of $E_1, ..., E_n$ given $H$)
3. $Coh(E_1, ..., E_n)$ (the coherence of $E_1, ..., E_n$)
Side Note: Wheeler’s result fits our intuitions (under the given interpretation):

A hypothesis becomes plausible when it makes observations fit together (cohere) which resist to fit together under the assumption that the theory is false.

Wheeler’s result displays why Myrvold (2003) defined how much a hypothesis \( H \) unifies the evidence \( E_1, ..., E_n \) as follows:

\[
\log(\text{For}_H(E_1, ..., E_n))
\]

Conclusion 1: Ceteris Paribus [c. p.] how much the evidence increases the coherence of the hypotheses has a positive impact on the confirmation of the hypotheses.

Conclusion 2: C. p. the coherence of the hypotheses has a negative impact on the confirmation of the hypotheses.

Conclusion 3: C. p. the coherence of the hypotheses has a positive impact on the confirmation of the individual hypotheses by the evidence.

We also want to ask: does the coherence of the hypotheses influence the confirmation of the hypotheses by the evidence?

Now let \( H = H_1 \land ... \land H_m \) and let us take a look at \( c(H_1 \land ... \land H_m; E) \).

\[
c(H_1 \land ... \land H_m; E) = \prod_{1 \leq i \leq m} \text{Coh}(H_i; E) \times \text{Coh}(H_1, ..., H_m|E)/\text{Coh}(H_1, ..., H_m)
\]

So we come to (almost) the same conclusions:

Conclusion 1: C. p. how much the evidence increases the coherence of the hypotheses has a positive impact on the confirmation of the hypotheses.

Conclusion 2: C. p. the coherence of the hypotheses has a negative impact on the confirmation of the hypotheses.

Conclusion 3: C. p. the coherence of the hypotheses has a positive impact on the confirmation of the individual hypotheses by the evidence.
5. On the Relationship between Coherence and Confirmation

"There is no direct relationship between correlation and confirmation but there is an indirect one [...]" [Wheeler (2008) p. 11]

There is a direct relationship between correlation (or coherence) and confirmation:

Confirmation is Coherence!

This is trivially true since Wheeler defined confirmation this way.

In the following I am going to introduce some alternative formulations of the relationship between confirmation and coherence.

Another way to state the relationship between confirmation and coherence is:

\[ c(H_1, E_1 \land \ldots \land E_n) > c(H_2, E_1 \land \ldots \land E_n) \iff \]

\[ \text{Coh}(H_1, E_1, \ldots, E_n) > \text{Coh}(H_2, E_1, \ldots, E_n) \]

A further alternative is:

\[ c(H_1 \land \ldots \land H_m, E_1 \land \ldots \land E_n) = \]

\[ \frac{\text{Coh}(H_1, \ldots, H_m, E_1, \ldots, E_n)}{\text{Coh}(E_1, \ldots, E_n)} \times \text{Coh}(H_1, \ldots, H_m) \]

In order to establish a substantial link between confirmation and coherence Wheeler has to show that \( \text{Coh}(H,E) \) is an adequate measure of confirmation.

At least it fulfills the following minimal conditions:

1. \( \text{Coh} \) favors true theories over false theories
2. \( \text{Coh} \) favors logically stronger true theories over logically weaker true theories after finitely many steps of observation and for every observation thereafter.
Side Notes: The requirements are taken from Huber (2008) and the results can be proved using the convergence results of Gaifman/Snir (1982) or Schervish/Seidenfeld (1990).

These requirements are fulfilled by the coherence measures by Fitelson (2003) and Olsson (2002), too.