

Responses to some Comments Regarding the Avian Flu

By Casey Luskin
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As more and more distressing cases of the Avian Flu are being reported, this issue is as important as ever. Some critics of my original post on the Avian Flu (http://www.evolutionnews.org/2005/10/avian_flu_an_example_of_evolution.html) noted that I got one fact wrong: that the Avian Flu has not yet undergone anti-genetic shift. In other words, the Avian Flu has not yet undergone the evolution some thought that it might. The thrust of this response is this: regardless of whether or not the Avian Flu has yet evolved into a more deadly form, this evolution would represent small scale genetic change and would not represent an impressive example of evolution.

Two Ways to Use the term "Avian Flu"

Based upon my readings, I have found that the term "Avian Flu" or "bird flu" is currently being used in two slightly different senses in the media and mainstream conversation about the Avian Flu.

Sense I: Firstly, there is the "Avian Flu" that has undergone reassortment with human flu viruses at various times in the past 100 years. The "Asian flu" indeed underwent such reassortment in the 1950's and subsequently infected many humans. The "Spanish flu" of 1918 apparently resulted from a similar event. This is documented in "Scientists Race To Head Off Lethal Potential Of Avian Flu" (*Washington Post*, by David Brown, August 23, 2005, http://washingtonpost.com/wp-dyn/content/article/2005/08/22/AR2005082201365_pf.html) as well as in some of the links below.

Sense II: Secondly, and more recently, there is "Avian Flu" which has the ability to kill many birds (and other mammals) in Asia but has not undergone reassortment (yet). It doesn't infect humans very easily which is why less than 100 people have died thus far. The reason the "Avian Flu" However, it is feared that if it does undergo "reassortment" (also called an antigenetic shift: "The term antigenetic shift is specific to the influenza literature; in their viral systems, the same process is called reassortment or viral shift"; from http://en.wikipedia.org/wiki/Antigenetic_shift) it could infect millions of people. This second sense strain is known as H5N1.

This described below:

http://en.wikipedia.org/wiki/Avian_influenza:

"It is feared that if a strain of avian influenza virus to which humans have not been previously exposed undergoes antigenic shift to the point where it can cross the species barrier from birds to humans, the new subtype created could be both highly contagious and highly lethal in humans. If a human infected with influenza also acquires H5N1, a mutant strain of bird flu that can be transmitted from human to human could form. Such a subtype could cause a global pandemic similar to the Spanish Flu that killed up to 50 million people in 1918."

http://en.wikipedia.org/wiki/Avian_influenza also states:

"H5N1 is a highly pathogenic form of avian influenza. Since 1997, outbreaks of H5N1 have caused the death or culling of tens of millions of birds. Over 100 people have been infected by H5N1, with a mortality rate of over 50%. H5N1 has been the focus of much concern amid warnings that the H5N1 strain will likely evolve into a form that causes a global human pandemic with a very high mortality rate."

Regarding "evolving into a new form" then read the main Wikipedia page on H5N1 strain and see that it says: <http://en.wikipedia.org/wiki/H5N1>

"In May 2005, the occurrence of Avian influenza in pigs in Indonesia was reported ("swine flu"). Along with the continuing pattern of virus circulation in poultry, the occurrence in swine raises the level of concern about the possible evolution of the virus into a strain capable of causing a global human influenza pandemic. Health experts say pigs can carry human influenza viruses, which can combine (i.e. exchange homologous genome sub-units by genetic reassortment.) with the avian virus, swap genes and mutate into a form which can pass easily among humans."

See also http://en.wikipedia.org/wiki/Antigenic_shift which nicely explains reassortment.

Correction to Original Post:

So I stand corrected regarding the reassortment of H5N1 strain. I thought that it had already undergone reassortment but I was mistaken—it has not yet undergone such reassortment, and let us hope that this does not occur.

„,But My Original Point Still Stands

But my critique of the relevance of the evolution of virus by reassortment to supporting Neo-Darwinian claims of macroevolution is still valid.

In the first sense "Avian Flu" has undergone reassortment in the past to infect many people.

But in the second sense, the new "Avian Flu" may not have yet undergone reassortment. However, and this is where I think it matters, claims that the Avian Flu (second sense) might evolve into something new is based upon recognition that it COULD undergo reassortment. This is how "sense I Avian Flu" has evolved to cause pandemics various times in the past 100 years. Therefore, boasting about the evolution of this current form of Avian Flu (second sense) evolving into a form which is highly infectious of humans are based upon concerns over reassortment.

So my critiques of Avian Flu as an impressive example of evolution still stand, regardless of whether or not it has indeed yet undergone reassortment. The evolution is based upon reassortment, so my analysis as to whether or not the Avian Flu is (or, given all of the current concerns, would be) a good example of evolution stands. Reassortment is just gene-swapping, and I contend that this entails the origin of nothing interestingly new at the genetic level. Evolution it is. But this is not an impressive example of evolution which should not be extrapolated to grand claims of the ability of Neo-Darwinism to produce new body plans, novel biological functions, or complex biological features.