

## Re: Genealogical Momentum

**Source:** <http://sci.tech-archive.net/Archive/sci.bio.evolution/2005-03/0479.html>

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**From:** Guy Hoelzer ([hoelzer\\_at\\_unr.edu](mailto:hoelzer_at_unr.edu))

**Date:** 03/14/05

Date: Mon, 14 Mar 2005 17:02:06 -0500 (EST)

in article [d0v8ns\\$2lpq\\$1@darwin.ediacara.org](mailto:d0v8ns$2lpq$1@darwin.ediacara.org), Tim Tyler at [tim@tt1lock.org](mailto:tim@tt1lock.org)  
wrote on 3/12/05 9:26 AM:

> *Guy Hoelzer <hoelzer@unr.edu> wrote or quoted:*  
>> *in article [d0shbh\\$1o73\\$1@darwin.ediacara.org](mailto:d0shbh$1o73$1@darwin.ediacara.org), Tim Tyler at [tim@tt1lock.org](mailto:tim@tt1lock.org)*  
>>> *Guy Hoelzer <hoelzer@unr.edu> wrote or quoted:*  
>  
>>>> *BTW, if you want an example of equations that are not reversible take a*  
>>>> *look*  
>>>> *at reaction diffusion equations, which I think were originally created by*  
>>>> *Alan Turing. You can also have a look at the equations Prigogine used to*  
>>>> *describe open dissipative systems.*  
>>>  
>>> *Reaction diffusion equations can be reversible in principle.*  
>>>  
>>> *Basically, the whole of the laws of physics exhibit time-reversal*  
>>> *invariance – or at least all the modern attempts to formulate*  
>>> *physical law have this property – so the rule of thumb is if*  
>>> *you can do something in the real world, it can be done reversibly.*  
>>  
>> *How would you argue that the second law of thermodynamics exhibits*  
>> *time-reversibility? They are inconsistent IMHO.*  
>  
> *Definitely not.*  
>  
> *In fact the second law is practically a \*consequence\* of reversibility!*  
>  
> *If you investigate reversible systems, one of the things you*  
> *find is that they often tend to get more disordered as time passes,*  
> *if you start them in an ordered state. That's basically a consequence*  
> *of the fact that the disordered states massively outnumber the*  
> *ordered ones – and so evolution from ordered states is likely to*  
> *result in more disordered ones.*  
>  
> *By contrast, irreversible systems often become more and more ordered*