

# Data integration with biological pathways

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Propositions belonging to the thesis

## **Data Integration with Biological Pathways**

by Martijn P. van Iersel, 5 November 2010

1. The act of gathering research findings and compiling them into a comprehensive pathway is an educational exercise.  
– *this thesis, Chapter 2*
2. As long as BioPAX can not be used to exchange layout information, it fails to fulfill the promise of making direct conversion between custom pathway formats unnecessary.  
– *this thesis, Chapter 2*
3. Identifier mapping should be performed as late as possible in a given data analysis work flow.  
– *this thesis, Chapter 5*
4. The correlation between transcript and protein abundances is highly variable in a gene-dependent manner, and this correlation must therefore be studied in the context of a pathway.  
– *this thesis, Chapter 6*
5. Open source is a prerequisite for maximal re-use of code.  
– *this thesis, Chapter 7*
6. Social Internet sites such as Wikipedia are not time sinks; they enable people to channel their mental energy, which would otherwise be spent watching TV commercials.
7. The ability to charge for access to even public domain materials is a good incentive for people to develop new and innovative ways to spread knowledge.  
– *Lawrence Lessig, Free Culture*
8. The overlapping genes of phage  $\Phi$ -X174 teach a software engineering lesson: optimizing for efficiency leads to decreased modularity.
9. A forcing function (meaning a behavior-shaping constraint) is the only possibility to eliminate the risk of forgetting to check out on a trip with the national public transport chip card.
10. Money is a formal token of delayed reciprocal altruism.  
– *Richard Dawkins, The Selfish Gene*
11. Debating climate change from the perspective of a geological timescale is an interesting theoretical exercise that has no relevance to the needs and wishes of people alive today.