Asymmetries in genetic markers: what can these tell us about evolution?

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There is increasing evidence that many mutational processes are asymmetric. For example, microsatellites markers tend to gain repeats more often than they lose repeats. The result appears to be a form of 'life cycle' in which an almost deterministic progression may be followed, starting with 'birth', followed by expansion and ending in 'death' or loss. Such a porcess may be highly informative. In comparisons between homologous loci across related species, consistent differences in the progress through the cycle may highlight evolutionary trends in mutation rate. Over the longer terms, such differences will tend to result in taxonomically informative patterns concerning the frequency of different lengths within the genome and of the frequency of microsatellites themselves. To interpret these processes correctly, it is important to allow for ascertainment biases arising from the preferential use of longer microsatellites as markers

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