New class of genes may shed light on evolutionary mysteries

THE old saying that where there's muck, there's brass has never proved more true than in genetics. Once, and not so long ago, received wisdom was that most of the human genome—perhaps as much as 99% of it—was "junk". If this junk had a role, it was just to space out the remaining 1%, the genes in which instructions about how to make proteins are encoded, in a useful way in the cell nucleus.

That, it now seems, was about as far from the truth as it is possible to be. The decade or so since the completion of the Human Genome Project has shown that lots of the junk must indeed have a function. The culmination of that demonstration was the publication, in September, of the results of the ENCODE project. This suggested that almost two-thirds of human DNA, rather than just 1% of it, is being copied into molecules of RNA, the chemical that carries protein-making instructions to the sub-cellular factories which turn those proteins out, and that as a consequence, rather than there being just 23,000 genes (namely, the bits of DNA that encode proteins), there may be millions of them.

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