



**Figure 2. De novo Methylation and Maintenance Methylation of DNA**

A stretch of genomic DNA is shown as a line with self-complementary CpG pairs marked as vertical strokes. Unmethylated DNA (*top*) becomes methylated “de novo” by Dnmt3a and Dnmt3b to give symmetrical methylation at certain CpG pairs. Upon semiconservative DNA replication, a progeny DNA strand is base-paired with one of the methylated parental strands (the other replication product is not shown). Symmetry is restored by the maintenance DNA methyltransferase Dnmt1, which completes half-methylated sites, but does not methylate unmodified CpGs.