Fig. 3. Model of trans-synaptic growth. Presynaptic (red) and postsynaptic (blue) cadherins (C) form homophilic bonds in the synaptic cleft (analogous to base-pairing in DNA). Cadherins are crosslinked by proteins in the postsynaptic density and presynaptic grid (yellow, orange), including CaMKII (red hexagons), which are analogous to the backbone of the DNA strands. Middle 2-D picture emphasizes analogy to DNA. Synapse size and strength are determined by the number of N-cadherin dimers. This number is redundantly stored by presynaptic and postsynaptic cadherin arrays and increases during late LTP.