How does DDNA-DNA remote replication could occur?

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Standard TGD view about **bio-catalysis**. U-shaped flux tube **appendages** from MBs of reactants reconnect and form connecting pair of flux tubes with large h_{eff}. The value of h_{eff} is reduced and flux tube shortens and brings the reactants together. This liberates energy allowing to overcome potential barriers and chemical bio-catalysis can proceed rapidly.

1. **Double strand opens**: the hydrogen bonds between DNA codons split and liberate energy, which allows h_{eff} of DDNA to increase so that the size of flux loop increases.
2. **DDNA** has now larger h_{eff} and can form long U-shaped appendages **reconnecting** with similar appendages from **DDNA-exotic DNA pair** in the environment behaving like free nucleotides effectively. Killer prediction: **codon-wise** replication and transcription.
3. h_{eff} for this complex is **reduced** to standard value for DDNA in double strand. The structures are brought together and energy is liberated. DDNA-(DDNA-nucleotides) flux tube is split as also the flux tube portions connecting DDNA to nucleotides.
4. Nucleotides are brought close to each other and the liberated energy allows **formation of valence bonds** which are carriers of energy. DNA codons are connected by hydrogen bonds so that piece of double strand is formed.

How does DDNA-DNA remote replication occur?

Same model should apply in the case of both single and double DNA strand because the formation of hydrogen bonds factors out from the dark dynamics forming single strand.

The DNA codons at B must form a gene. Information about gene should be transferred. Essentially a seat for the condensation of codons should be realized in B. The information about the order of DNA codons must be preserved in the scale of gene.

An analog of quantum teleportation is needed.

1. Assume that gene is accompanied by a **dark gene** - closed dark flux tube having a portion G parallel to gene with dark codons attached to it by U-shaped appendages. Otherwise the shape of G flux tube is free. G with dark codons attached should de-attach from the energy resonance with DNA codons by a change of h_{eff}, scale in size, get momentum and energy, and move to B to serve as a seat of condensation forcing the order of attached exotic DDNA-DNA pairs to be correct. G would behave like dark matter and - unlike ordinary gene - could get to B.

   The **needed kinetic energy** could come from if the change of h_{eff} is reduction providing a **general energy source for motor actions of MB**. If BSFR is in question, the time reversed state would allow to **extract energy from environment** as as dissipation with non-standard arrow of time (perhaps basic mechanism of metabolism!).

   h_{eff} would be reduced to the ordinary value and in B the situation would be as before ordinary replication. Replication could proceed as usual.

2. In quantum teleporration the original system is destroyed. Now the dark gene G attached to gene would be transferred from A to B.