1. **'Rewriting', a basic CAS technique.** This technique is used in simplification, equation solving, and many other CAS functions, and it is intuitively comprehensible. This would make rewriting useful for educational systems — if one copes with the problem, that even elementary simplifications involve hundreds of rewrites. As an example see
   http://www.ist.tugraz.at/projects/isac/www/content/publications.html#DA-M02-main

2. **'Reverse rewriting' for comprehensible justification.** Man CAS functions can *not* be done by rewriting, for instance cancelling multivariate polynomials, factoring or integration. However, respective inverse problems can be done by rewriting and produce human readable derivations. As an example see
   http://www.ist.tugraz.at/projects/isac/www/content/publications.html#GGTs-von-Polynomen

3. **Equation solving made transparent.** Re-engineering equation solvers in 'transparent single-stepping systems' leads to types of equations, arranged in a tree. ISAC's tree of equations are to be compared with what is produced by tracing facilities of Mathematica and/or Maple. How could ISAC's equation solver be extended ? See
   http://www.ist.tugraz.at/projects/isac/www/content/publications.html#da-mlang

4. **ISAC, a transparent single-stepping system.** What distinguishes ISAC from a CAS ? What are the advantages of a system based on a computer theorem prover (CTP) ? What novel kinds of services can such a system provide for education ? See https://lsiit-cnrs.unistra.fr/DG-Proofs-Construction/index.php/ISAC_system and http://www.ist.tugraz.at/projects/isac

5. **CAS functionality adopted by CTP.** There are good reasons for warning 'never trust a CAS'. Computer theorem provers (CTP), however, allow users to trust the correctness of their results. Now, since more and more CAS functionality is taken over by CTP — how can such trust be ensured ?
   See http://www.score.cs.tsukuba.ac.jp/ ~kaliszyk/docs/ck_thesis_webdoc.pdf