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Dear Norm:

I am sorry that you are offended by my mistreatment of the English language. If I have coined a word, or misused an old one, from time to time it is because I had some concept that was difficult or cumbersome to express in the existing language. Perhaps I should be a purist more than I am, but I have always felt that words were merely symbolic tools, and that utility and usage were the main bases for their recognition. If we deny the possibility of evolution in meanings, we will have a sterile language. There are very few words in science which have not been ultimately derived in this way.

If a word is proposed which is ambiguous or imprecise in a given context, ~~then~~ if it thus causes some confusion, then of course it becomes a very poor tool, and should be abandoned. Except for very common words which may often be misused, natural selection usually takes its course, and you can help it along by ignoring the usage. For this purpose it is preferable if the new usage involves an unfamiliar word. I don't know whether you have any special brief for or against "prototroph", but it has seemed to me almost indispensable in its area of application; the test of it will be its usage by others.

I place less faith than you do in the value of dictionaries for indicating current usages for technical terms— what does your dictionary have for "translocation" or "inversion"—, but I have used them. I am not too happy about "transduction", but my dictionary gives this as the act of conveying over, which seemed to fit very well my conclusions about *Salmonella* genetics. I knew about transducers in Electric Power, but think this has no more preemptive value than does transformation (= wig) (or in relation to transformers) or induction or poky (= jail) for their biological uses. It is just because transformation seems so overloaded with diverse connotations in related contexts that I prefer not to perpetuate it. If the only established uses of transducer are in distant contexts, I foresee no trouble from them. Perhaps someone has used the expression, obscurely, in sensory physiology. I still think that the expression "genetic transduction" stands on its own feet as almost self-explanatory. I am still not happy with its cacophony, and will be pleased to consider any suggestions. (Someone suggested intramission, but this might have the right connotations).

As to prototroph, Ryan and I asked around about it, and I was acquainted with its synonymy with autotroph in the very old literature. My usage seems close to a special case of autotrophy (it approximates relative auto-autotrophy). The committee that discussed nutritional nomenclature in 1946 (CSH volume 11) did not complain about "prototroph". Its synonymy with autotroph was rare and is obsolete.

I do not agree with your third paragraph, but agree wholeheartedly with your fifth. Perhaps we should have an International Judicial Commission for genetic names, as there is for botanical and zoological. (Even there, albeit unfortunately, we will find that ~~synonymous~~ words are imported without prejudice, e.g. *Drosophila* in Diptera and in the hymenoptera). I am not sure where we should draw the line, and have perhaps been too beholden to convenience. This does not preclude getting good advice on the subject. If you mean all this seriously, I will have my revenge on you by asking for it on the next occasion. On the whole, I prefer a distinctive new construction (e.g. *autotroph*) to an imprecise application of an old one (e.g. biochemical mutant, in the same sense), but this may be urwise.

Sincerely,

Joshua Lederberg  
Associate Pr