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The Fate of Sins in Water

Introduction

In virtually all religions and cultural rites, water is a symbol for purity. It is commonly used to wash away sins of all kind and receives the sinner's impurities. Such rituals leave the persons in question more or less relieved, but nobody has ever asked: What happens to the sins in water? After transfer to the water phase, they quite probably will not simply disappear. Asking such a question leads to an intriguingly wide spectrum of questions. The author will not define sins specifically because they vary extremely between different cultures – the variations are so wide that sins of one culture can be virtues in another (options for intercultural sin neutralization are still on a speculative level). They all have in common that sins actually exist and washing them away is considered an effective concept. Still, there are some obvious limitations of this method. First of all, washing away sins will only be effective for water soluble sins. This leaves all hydrophobic, sticky or surface-bound sins with the sinner which may contribute to some failures of the method. But for a start, let us first consider the water-soluble sins anyway. They may be classified according to their solubility and their mass. Massive sins probably will travel more slowly in water than lighter sins, are less soluble, may lead to enhanced viscosity and, possibly, undergo sedimentation or agglomeration, forming sinful flocks. Cardinal sins are presently very popular among the catholic sacred water soluble sins. Xenobiotic sins such as spam mails are not considered here because they are not part of any decent cultural sin archive.

Are sins reduced or oxidized?

A crucial question is if sins are biodegradable. Following a general natural principle, they should be so, as they are of biological origin because we are humans and not gods. If sins would not be degradable, generations before us would have accumulated massive amounts of sins (some of which may have been declared as virtues after cultural changes). Such accumulations have not yet been reported (which does not mean that they don't exist). Anyway, biodegradation of sins is a fair assumption. However, it is not clear if they are reduced or oxidized and to what end products the reaction leads – possibly sin oxide and water? Larger sins may be fragmented by invertebrates before they are finally degraded by microorganisms. If they are responsible for biodegradation and thus can clear the world from sins, they should be considered in a completely new light. The highest turnover rates, of course, are expected in biofilms where sin accumulation is probable and because biofilms do not know any morals. However, as a result of biodegradation, accumulation of biomass will occur. This would give an ambivalent role to biofilms, eliminating sins from the water phase, but consisting of metabolized sin and using energy derived from sins. Furthermore, sin sequestering will turn biofilms quite likely to a sink of sins. They may easily become a source if the biofilm decomposes before the sins have been completely degraded. Microbiologically, there are many interesting questions, e. g., is there positive and/or negative sinotaxis of sin degraders or sin avoiders? Are organisms which do not degrade sins hypocrite? And, most of all: what are the metabolites and are they even more sinful? Any sin degradation gene cluster is highly likely to be a hot topic in agricultural biotechnology, possibly transferred into tomatoes, pigs or cannabis (in the latter case for immediate presumptive desinnification).

Sin treatment options

With regard to water treatment, it can be assumed that basic techniques analogous to activated sludge and bioreactors will provide first options. Membrane technology offers interesting but transient possibilities, because it generates sin concentrates comparable to Liebigs meat extract and will require further treatment or forgiving dilution. It is probably best to systematically categorize sins and their appropriate treatment:

1. Small sins, forgivable, polar and easily soluble (probably the majority of all) most likely occur as "planktonic sins". The obvious option is to treat them conventionally: Charged sins may be removed by precipitation and sedimentation (counter-sins might be very useful for this purpose). In treatment sites, sin sludge will be generated which may have virtues as a fertilizer, e. g., for more or less sinful potatoes. Incineration is another option – the question remains weather this will generate or require energy. It can be assumed that sin incineration is exergonic and is used in hell for fuelling purposes (see [1]: "Hell explained by chemistry student").

2. Non-polar low mass sins are volatile and can be stripped (purged) and removed from water, being evaporated into the atmosphere. However, there they are possible candidates for contributing to the greenhouse effect because of their heat capacity. Some photodegradation can be expected ("see the light!") but it may remain incomplete. They may serve as nuclei for raindrops and fall back to earth during precipitation. They will contami-

nate earth surface and, thus, it is possible that people consume sinful salad, carrots, cucumbers or other vegetables unknowingly.

3. Anaerobically generated or degraded sins are fascinating because the spectrum of end products may be wide. It is possible that they undergo fermentation resulting in very unholy metabolites, possibly stimulating further sins. On the other hand, they may provide a powerful sin-fuel with high energy content, replacing fossil fuels and, thus, turning a sin into a virtue.
4. Hydrophobic sins, accumulating in hydrophobic body compartments. Such sins, obviously, continue to stick and are probably reason and componentpart of the original sin. Particularly sticky sins involve slimes and even covalent bonds. Maybe they can be tolerated if they make up only for a tiny proportion of the overall sins. This remains to be investigated by enforced sin analysis. However, the most radical traditional elimination method, which applied during holy of inquisition with subsequent sinner incineration, has been abandoned on the basis of customer complaints and extended collateral damage.

5. Insoluble sins have to be removed mechanically and may find use as road construction material. However, only after complete oxidation (or reduction) it will be suited for the road to heaven while incomplete processing may leave exits to the many roads to hell.

A special case is holy water. Its use is wide-spread in many religions. First of all: if holy water is used for sin removal or quenching, is it still holy after use? How to dispose of it? Should holy water contain surfactants or other, sin-releasing, additives? Which are these? In any case, there should be an expiry date for holy water as it can be heavily contaminated by pathogens [2]. Applied for final testament, it may make meeting the creator earlier than expected due to superimposed infections.

The future of sins

The thermodynamics of sins are still unexplored, although it must be assumed that fundamental laws will apply, and, in analogy to entropy, the overall quantity of sins is increasing in the universe. Furthermore, the number of people in the world is increasing steadily too, and, according to most clerical sources, the rate of sins increases even more. Therefore, multiple accumulation is to be expected which leads to a massive burden of sins. This will be further amplified by the longer life expectancy, most probably with the consequence of longer sinning periods and options for committing stronger sins because people have sufficient time for that. Global warming is eventually a generally accepted fact which cannot be ignored. Apart from directly contributing to global warming due to sin heat capacity: Will it indirectly contribute to sinning? It must be considered that global warming will intermittently lead to lesser body coverage in some cultures which, in turn, will provide temptations to potential sinners they cannot resist. However, what would happen if sinners would cease sinning completely? A massive unemployment problem on the clerical side might be the consequence. Nevertheless, this group can easily define new sins all the time, keeping themselves employed. On this background, it has to be assumed that sins will become even more abundant.

The case for sin management and recycling

In the first place, it must be acknowledged that sins in water are a largely unknown class of complex contaminants. The precautionary principle demands to design sin removal measures as listed above, although the current level of knowledge is still insufficient. Last not least, this is due to a regrettable lack of analytical methods. Qualitative and quantitative sin analysis will have to be developed from the scratch. Fluorescence dyes could help localizing sins. Spectroscopic methods are promising, particularly mass spectroscopy may help to distinguish large from small sins. High repentence chromatography may reveal further properties of sins. However, for the time being, gross parameters as above elaborated classifications may be a first step – e. g., total sin content (TSC), total soluble sin content (TSSC) and total soluble severe sin content (TSSSC).

In order to decelerate sin accumulation, sustainable use and intelligent management of sins both appear highly recommendable, combined with further attempts to exploit the energy potential embedded in sins. A balance between sufficient sinning in terms of energy production and sin overproduction has to be aspired. Maybe sin recycling turns out to be a good idea because the sins always seem to be the same.

Obviously, a completely new field of research has been defined here. It requires interdisciplinary scientific and clerical attention as well as substantial funding for addressing the most fundamental questions and to verify possible solutions. There is no doubt that the EU Water Framework Directive and other regulatory systems will benefit from the knowledge and integrate it. Creative approaches will help us to cope with that problem as long as they are not sinfully serious.

References

[1] *www.cognitive-edge.com/blogs/dave/2009/01/hell_explained_by_a_chemistry.php*

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