1. THE PROBLEM MOTIVATED

Let us start with a trivial example, which however already suggests the outlines of the problem at hand. Imagine I have collected my lunch at a self-service cafeteria so that now my tray holds, say, a paper plate with a sandwich on it, another one with fruit, and finally, a soda in a large cup (the kind known as “small”). Now, as I prepare to detach myself from the counter, I arrange the three objects on the tray. This can be approached through several theoretical perspectives.

First, there is the mathematical-physical perspective, employing the specific field of statics (pioneered, as we shall note again below, by Archimedes). The task is to arrange three objects on a plane, so that their individual centres of gravity, and the centre of gravity of the system as a whole, will ensure maximum stability. One should in particular consider the problem of the system’s robustness, i.e. how it may react with the disturbances it is likely to undergo as I move towards a table. This is a very complex problem, and the fact that we very often (not always) solve it in effective ways, may indicate our powers of unconscious computation.

The mention of the “unconscious” immediately brings to mind a further relevant theoretical perspective. It may be suggested that the desire to arrange objects in neat, ordered ways could reflect either an obsessive-compulsive disorder, or its more or less universal incipient form. Whatever one thinks of any particular form of psychoanalysis, it is clearly a possible way of explaining my acts as I rearrange the objects on the tray. While the mathematical perspective provides a possible functional role for the arrangement obtained, the psychoanalytic perspective provides a possible functional role for the act of arrangement itself – by uncovering the desires and needs which find their outlet in that act.

Finally, regardless of the desires that motivate the act of arrangement, and regardless of the physical function of that act, one can study the formal properties of the arrangement obtained, this time adopting the perspective of aesthetics. Merely as a visual pattern on the tray, the objects possess properties such as symmetry and composition. The driving force that makes me align my plates along a precise geometrical configuration is perhaps best understood by the psychoanalyst. However, some of the properties of the alignment I achieve are not psychological, but aesthetic: they belong, so to speak,
not to the psychopathology of everyday life, but to the aesthetics of everyday life. Anxiety was momentarily warded off; but on the tray itself, we observe not the absence of anxiety, but the presence of, say, the golden section. In general, then, statics studies the function of the arrangement obtained; psychoanalysis studies the function of the act of arrangement; and aesthetics studies certain objective features of the arrangement obtained (which are of course difficult to characterize precisely). We may perhaps say (if only so as to have the word “function” available for our use on all occasions) that aesthetics studies the aesthetic function of an object. This is useful because now we can note that the various functions differ as to their dominance in different contexts. We may observe, for instance, how people rearrange their trays as they sit down on the table: the tray safely in place, the physical function lost its dominance and the aesthetic function is dominant instead.

I have introduced two theses. One is that the aesthetic function is ubiquitous; the second is that, in different contexts, it may be more or less dominant. Such theses have long been current (their best statement probably remains Mukarovsky (1970), translation of a work written in 1936), though perhaps interest in the aesthetic function of literary works has more recently waned in the English-speaking world. At any rate, the trivial example I have delineated is meant to introduce the idea of the aesthetic function of mathematical texts.

Thus, we should not be concerned about the fact that mathematical texts have obvious, overt functions (akin to the static features of the tray in my example), e.g. to obtain the truth of mathematical results for some possible mathematical or physical applications. This overt function can be separated, analytically, from the aesthetic features of a mathematical text. (Of course, there might be interesting interactions between such overt functions and the aesthetic function.) Further, we need not be concerned about another fact, that mathematical texts – like all texts – are motivated by all sorts of external forces, such as the sociological realities of publication and tenure, comparable to the psychological processes suggested to underlie my ordering of plates on the tray. (Once again, though, sociological factors may interestingly interact with the aesthetic factors.) Finally, I wish to stress – this is the main point of my trivial example – the mundane nature of the aesthetic. At least to begin with, in this article I do not intend to wax lyrical about the beauty of mathematics. Mathematical works are sometimes great works of art, sometimes (even when they are of considerable mathematical value) their presentation is boring and pedestrian. It is not my contention that mathematical texts are particularly beautiful, more so than other types of human