It is by now a commonplace in the study of intellectual history that the “world picture” of an age is more profitably investigated in popular literature than in masterpieces. Our interest is in underlying assumptions, unexamined attitudes, what might be called the ground bass against which the individual melodies of a period are played. Such assumptions are present in great works and works which aim at greatness, but they are blurred by the individuality of the conscious artist. But in popular literature—writing turned out quickly, unpretentiously, and primarily for profit—the problems introduced by individuality are greatly reduced. The popular writer—suffering from no delusions of grandeur, pressed for time, and usually working within a formula—has neither the desire nor the opportunity to impose upon his work strongly individualistic elements. The intellectual assumptions in such works are, for the most part, unplanned; they appear naturally as manifestations of the writer’s unreflective view of his age. They constitute, therefore, exactly the kind of evidence we want.

More specifically, it would appear that the detective story of the rationalistic or “great detective” variety offers a fertile field for the study of the general way in which a culture views science. These stories are popular in the sense described above, but what gives them their special interest is that the “great detective” can be seen as a vulgarization of the scientist, a popular surrogate for the less glamorous figure of the austere investigator of nature. Like the scientist, the detective collects data, forms hypotheses, checks these by the equivalent of experiment, and reaches conclusions through a combination of observation and logic. Indeed, at bottom the “great detective” is a fantasy figure of the perfectly functioning mind, pure intellect proceeding inexorably onward, indifferent to, or rather oblivious of, emotional considerations. But on a larger cultural scale this is also the ideal of the scientist, partially as viewed by the misreading, the general argument is sound. Indeed, it appears that Stout,
scientists themselves and partially as the scientist is apprehended by the outside world. This type of fantasy figure does not, I think, appear in literature until after the emergence of modern experimental science; its nearest counterpart in earlier literature being the necromancer or undifferentiated wise man. It is probably not accidental that the hero of deduction is not found before the eighteenth-century or that the "great detective" does not appear until the heyday of scientific success and prestige in the nineteenth-century.¹

If the detective is a popularized version of the scientist, then detective stories should reflect changing cultural attitudes toward the nature and practice of science. My intent in this paper is to show that this is so. The argument is that Sherlock Holmes reflects, almost as precisely as a mirror, the basic assumptions and tones of classical physics, while Nero Wolfe, his twentieth-century analogue, exhibits marked differences which correspond, again with considerable precision, to the revolutionary changes in physics produced by the emergence of sub-atomic phenomena. My treatment of shifts in physics will, of course, be partial, derivative, and unoriginal. The interest is not in the changes themselves, but rather in the astonishing way in which they are reproduced in the intellectually unpretentious detective story. I know of no more striking example of the way in which very complex ideas have filtered into the general consciousness.

For my purposes Sherlock Holmes and Nero Wolfe are ideal subjects. Not only are they the outstanding examples of the "great detective" for the nineteenth- and twentieth-centuries, respectively, but there is the added advantage that, as Edmund Wilson noticed some years ago, Wolfe is a deliberate imitation of Holmes. Because Rex Stout so completely reproduced the Doyle formulas and characteristics, it is possible to claim, with only slight exaggeration, that Wolfe is Holmes in modern dress. The close imitation and host of similarities furnish us with a common background against which differences can easily be located, and in the light of which differences acquire greater significance.²

Let us glance first at the similarities, as summarized nicely by Edmund Wilson:

Here was simply the old Sherlock Holmes formula reproduced. . . . Here was the incomparable private detective, ironic and ceremonious, with a superior mind and eccentric habits, addicted to overeating and orchid-raising, as Holmes had his enervated indulgence in his cocaine and his violin, yet always prepared to revive for prodigies of intellectual alertness; and here were the admiring stooge, adoring and slightly dense, and Inspector Lestrade of Scotland Yard, energetic but entirely at sea, under the new name of Inspector Cramer of Police Headquarters. . . . It was only when I looked up Sherlock Holmes that I realized how much Nero Wolfe was a dim and distant copy of an original.³

While some of these equivalences will later be shown to be superficial and misleading, the general argument is sound. Indeed, it appears that Stout,
to emphasize rather wittily his debt to Doyle, deliberately reversed the physical characteristics of detective and assistant. Sherlock Holmes was thin, intense, quick, and nervous; while Watson was heavy and slow-moving in mind and body. In Stout’s world, it is Wolfe who has these latter characteristics, and it is the assistant, Archie Goodwin, who is similar to Holmes in physical prowess, alertness, and delight in activity.

The similarities go deeper. Stout has taken over from the Doyle stories not only their outward characteristics but also the secret of their enduring popularity. Christopher Morley has observed, and no fan of Holmes would disagree, that “We read the stories again and again; perhaps most of all for the little introductory interiors which give a glimpse of 221B Baker Street. . . . We have a glimpse of the sitting-room, that room we know so well. There are the great volumes of scrapbook records; the bullet marks on the walls; the mysterious ‘gasogene’. . . .” (Preface, p. viii) But ambiviance is equally important in the Wolfe stories, with “the brownstone of West 35th Street” exerting the same attraction as the famous lodgings of Holmes. Here also it is the accumulation of detail that we relish—the red leather chair in Wolfe’s study which is reserved for the client and surrounded by the less prestigious yellow chairs, the daily routine with the orchids (9 to 11 in the morning, 4 to 6 in the afternoon), the unlighted cigar upon which Inspector Cramer grits his teeth, the explosive “Pfui!” of Wolfe, and on and on.

There is, then, no doubt but that Stout has modelled his whole fictional world, in characters, style, and tone, on that of his predecessor Doyle. The interesting fact, though, is that beneath these obvious and surface similarities, the basic assumptions of the two sets of stories are radically different.

Let us first consider Holmes as a representative of the great empirical scientific tradition which acquired its first victories in the seventeenth-century, became stabilized in the eighteenth, and broke out into another series of triumphs in the nineteenth. A convenient summary of the heart of this science, as represented by its greatest glory, physics, is given by the eminent modern physicist-philosopher, Louis de Broglie:

In classical physics we had postulated the possibility of describing natural phenomena by figures and by motion in the framework of space and time, and this hypothesis had met with an astonishing success; it had seemed capable of allowing, always and everywhere, the establishment of rigid and precise ties of inevitable succession amongst all natural phenomena, and had thus suggested the hypothesis of a universal determinism.4

The basis of Holmes’ method is exactly trust in the existence of “rigid and precise ties of inevitable succession.” A convenient locus is Chapter 2 of A Study in Scarlet. Watson, when first he starts rooming with Holmes, comes across a journal article with “the somewhat ambitious title” of “The Book of Life.” The article, though Watson does not know it at the time, was written by Holmes and is a condensed and formal laying out of
his basic principles:

... it attempted to show how much an observant man might learn by an accurate and systematic examination of all that came in his way. ... The reasoning was close and intense, but the deductions appeared to me far fetched and exaggerated. The writer claimed by a momentary expression, a twitch of a muscle or a glance of an eye, to fathom a man's inmost thoughts. Deceit, according to him, was an impossibility in the case of one trained to observation and analysis. His conclusions were as infallible as so many propositions of Euclid. ... "From a drop of water," said the writer, "a logician could infer the possibility of an Atlantic or a Niagara without having seen or heard of one or the other. So all life is a great chain, the nature of which is known whenever we are shown a single link of it." (A Study in Scarlet, pp. 12-13)

And in practice, as everyone knows, Holmes produces chains, or to use his favorite word traines, of infallible reasoning based upon close and detailed observation. One example will more than suffice; here is Holmes explaining how, when first they met, he knew Watson had come from Afghanistan:

Here is a gentleman of a medical type, but with the air of a military man. Clearly an army doctor, then. He has just come from the tropics, for his face is dark, and that is not the natural tint of his skin, for his wrists are fair. He has undergone hardship and sickness, as his haggard face says clearly. His left arm has been injured. He holds it in a stiff and unnatural manner. Where in the tropics could an English army doctor have seen much hardship and got his arm wounded? Clearly in Afghanistan. (A Study in Scarlet, p. 14)

In addition to the Euclidian precision of the reasoning, we are struck by the triumphant nature of the repeated clearly.

But it is exactly this clearness which has disappeared from modern physics. De Broglie continues the passage previously quoted in this way: "The intervention of the quantum of action no longer allows us to obtain as clear and also as well determined a picture of the evolution of things; it involves a certain weakness which asserts itself in uncertainties." (p. 110) Later he elaborates this critical theme:

There is here, therefore, a complete reversal of the old perspectives; it is no longer rigorous determinism and the precise laws of mechanics which, applied to the elementary entities, are at the basis of our physical explanations. This basis is now chance, probability, reigning over the kaleidoscopic world of corpuscles and quanta; the laws of mechanics, with their apparent rigour, are nothing more than a macroscopic illusion due to the complexity of the objects on which our direct experiments bear and to the lack of precision of our measurements. (pp. 199-200)

While it is probably possible to find examples of Wolfe of straight-down-the-track logical constructions, they are certainly rare. In A Right To Die, for example, Wolfe solves the crime by noticing a curious pattern in the names of several of the people involved in the case, the recurrence of the diphthong au. Two of these repetitions are connected with the murderer, one occurring in her real name, the other in her pseudonym. By following up this intuition, Wolfe exposes her true identity. In an
The extremely revealing passage, Archie muses on the phenomenon:

I certainly need a nap, but there was something on my mind. Not whether it was in the bag, but how we got it. Had it been luck or genius or what? It had been years since I had given up trying to figure how Wolfe's mind worked, but this was special. I hadn't happened to notice that there was an au in four of the names: Paul, Ault, Maud, and Vaughn, but I might have? anybody might. That was nothing special. The point was, if I had noticed it, then what? I would have filed it as just coincidence, and probably Wolfe had too. But although filed, that au in four of the names was still somewhere in his mind later, when it got really tough, so in going over and over it, every detail and every factor, that popped up. Okay, but then what? Did he deliberately team them up? . . . Then did he consider each pair and finally decide that the one that might not be just coincidence was Ault and Maud, because if a woman named Ault changed her name she might pick one that had au in it? No. I could have done that myself. I hadn't, but I could. What had happened in his mind was something that had never happened in mine and never would. He had said "tenuous almost to nullity." But there I was . . . and I knew who had killed Susan Brooke. . . . (pp. 168-169)

The Wolfe technique discussed here has, I contend, virtually nothing in common with the deductive reasoning of Holmes. Indeed, the closest approach to such reasoning, a systematic investigation and screening of the au permutations is explicitly denied, and the exact nature of the mental processes employed is left unknown and mysterious. But, in broad outline at least, these processes seem remarkably like those of modern theoretical physicists. There is a common reliance, for instance, upon highly abstract formal patterns far removed from common experience and common sense. In physics this emphasis upon rather esoteric mathematical constructions has even led some observers, such as Lord Russell, to grumble about a revival of "the numerical mysticism of the Pythagoreans."6 Furthermore, both in the kind of data considered and in the mode of dealing with it, the clear sharp edges of classical science and logic have become blurred; Wolfe has abandoned certainty and deals only with the probabilistic. Within this realm he operates by what appear to be intuitive leaps. His own designation of his thought as "tenuous almost to nullity" is quite consonant with de Broglie's sophisticated view of modern physics as an arena in which at best "the scientist succeeds in snatching from the physical world, which he would like to understand, certain information, always partial, which would allow him to make predictions that are incomplete, and in general, only probable." (p. 131) The extent of these reservations and qualifications brings to mind David Hilbert's famous witticism that "physics is becoming too difficult for the physicists."

Worthy of special emphasis is the fact that the evidence used by Wolfe above, and this is quite typical, is nonphysical. Holmes, on the other hand, deals almost completely with physical evidence—footprints, cigar ashes, stains, etc.—and furthermore craves immediate contact with the physical world. He is, among other things, almost the apotheosis of
the tracker. Here is a representative picture of Holmes in action:

As he spoke, he whipped a tape measure and a large round magnifying glass from his pocket. With these two implements he trotted noiselessly about the room, sometimes stopping, occasionally kneeling, and once lying flat upon his face. . . . As I watched him I was irresistibly reminded of a pure-blooded, well-trained foxhound . . . For twenty minutes or more he continued his researches, measuring with the most exact care the distance between marks which were entirely invisible to me, and occasionally applying his tape to the walls in an equally incomprehensible manner. In one place he gathered up very carefully a little pile of gray dust from the floor, and packed it away in an envelope. (A Study in Scarlet, pp. 22-23)

But what is this except a manifestation of the root assumption of classical physics that individual objects had an indubitable existence and were uniquely located in space and time?

In modern physics this assumption is, according to de Broglie, "Obscured and subject to revision." (p. 11) We are not surprised, therefore, to find that Wolfe has no interest whatever in things. He leaves his house only under the greatest provocation and never willingly. He does not visit the scene of a crime, and he never, never whips "a large round magnifying glass from his pocket." In fact, he is almost always separated from the actual data and circumstances of a case by a considerable distance, physical as well as mental, and receives his information through verbal reports from Archie. On the basis of these reports, he makes suggestions and instigates plans of action, which are carried out by his assistants. In times of crisis he goes into a kind of trance:

Finding that that wasn't getting us anywhere, he leaned back and closed his eyes, and his lips started working. They pushed out, then drew in, and kept at it—out and in, out and in. . . . Man at work, or possibly genius at work. I never interrupt the lip act because I can't; he's not there. It may last anywhere from half a minute to half an hour; I always time it, since there's nothing else to do. (p. 106)

Not only do Wolfe's procedures reflect the changes in physics regarding the status of objects, but they furthermore seem to me in striking correspondence to the marked division in modern science between the laboratory and the study, between the experimentalists and the theoreticians. The fact is that the modern theoretical physicist is as far from the experimental data and brute matter as Wolfe is from his cases. And this is connected with a major difference in the Holmes and the Wolfe stories, the relation between the detective and his assistant. Watson was pure foil; quite properly described by Wilson as "the admiring stooge, adoring and slightly dense." This is not an accurate description of Archie, who is a much more substantial and important figure. Indeed, Wolfe and Archie constitute a partnership, with Wolfe as the senior partner. But Wolfe cannot exist or operate without Archie, while Holmes had no such dependence on Watson. This is not accidental; rather, the relation between Archie and Wolfe is almost exactly like that between the experimentalist,
or gatherer of data, and the theoretical physicist. One can even observe
the Wolfe stories—it is present in the preceding quotation—the curious
mixed feelings which the experimentalist has toward the theoretical
Archie obviously admires and needs Wolfe, but at the same time he views
him as hopelessly impractical and difficult. The tone of "genius" as it
applies it to Wolfe always hovers somewhere between admiration and
contempt. This kind of tension exists rather noticeably in physics as well.

But more than this, in the Wolfe stories we find also a re-creation of
the organizational structure of modern physics. Holmes, by way of con-
trast, is the whole show, and it is completely a one-man show. In this he
like the giants of the earlier science. The Wolfe situation is more com-
it is essentially a group effort, with Wolfe at the center and Archie
manager and organizer. In practice, Archie heads a team of detectives
each of whom has his own specialty; Saul Panzer, for example, is the
greatest thief in the world. The group also has its medical consultant, its
legal advisor, and its press representative. In other words, it is very much
like the modern research team, and like such teams is a response to a much
more complex world.

To conclude this study I would like to attempt a deeper penetration by
considering the relation of the scientist to his field and to society. For
purposes of simplicity I will rather arbitrarily set aside developments in
science centering around the Second World War—the great crises produced
by the development of the atomic bomb, the massive underwriting of
scientific research by governments, and the uncertainties resulting from
the experience that technology creates at least as many problems as it
solves. These are simply too complex to be entered into here. Further-
more, I am aware that the things discussed in what follow are not limited
to science but have obvious social roots as well. Despite these qualifica-
tions and misgivings, however, the subject is worth a few tentative obser-
ations.

One of the most prominent attributes of nineteenth-century science
was its supreme confidence. In Lord Russell's words, "There prevailed at
that time a kind of scientific optimism which made men believe that the
Kingdom of Heaven was about to break out on earth. The vast strides
accomplished by science and technology made it seem not unplausible
that the solution of all problems was close at hand." (p. 374) This bubble
soon burst, partly because of developments within science, partially by
developments in the political realm. New theoretical structures were, of
course, created, and they have turned out to be imposing and magnificent.
But the old confidence has not been regained. As the quotations from de
Broglie show, the new physics is more sophisticated than the old, but it is
also more hesitant and problematic. Because of the enormous complexity
of his subject and its distance from the assumptions of common sense and
common language, because also of the need for ever increased specializa-
the modern theoretical physicist has become ever more withdrawn from other scientists and even more distant from the ordinary world.

Here also, though admittedly the analysis is very rude, the detective stories offer parallels. Holmes is an almost perfect example of the supreme, even the hubristic, confidence of the earlier period. He is imbued with the feeling that the straightforward intellect can set things straight, and he delights in applying his powers within a social context. While he is outside the official police structure, he is not outside his society but is an integral working part of it, with no doubts about his place in society or the value of that society. His confidence is based upon intuitive convictions about the stability of the physical, the mental, and—by indirection—the social worlds.

So strong is the impulse in Holmes to operate in the world that in periods of inactivity he must resort to drugs to dull his pain. "My mind . . . rebels at stagnation. Give me problems, give me work, give me the most abstruse cryptogram, or the most intricate analysis, and I am in my own proper atmosphere." (The Sign of Four, p. 92) Holmes' deepest wish is to be active, and active primarily in society, for in actuality he finds the solving of "abstruse cryptograms" not very satisfying.

Wolfe is completely different. He must be prodded by Archie to accept cases; he must be insulted into applying his mind to the outside world. As a matter of fact, Wolfe uses his intellect mainly to construct a refuge for himself. All his efforts are directed ultimately at excluding the outer world. At bottom he represents intellect on the run, with no confidence whatever in the ability of intellect either to comprehend finally or significantly to affect an almost infinitely complex universe. Almost the essence of the position is contained in this exchange between Archie and Wolfe:

"Very well. You presumed that I am aware of the situation and I said I am. There isn't one single solitary sensible thing that you can do or I can do or Saul and Fred and Orrie can do."

He nodded. "You're right." He switched the reading light on and picked up the book he was just starting. (p. 126)

Obviously this does not represent the only, perhaps not even the predominant, attitude in modern physics, but it is certainly not a insignificant general orientation. Wolfe emerges finally as an excellent example of the basic uncertainties concerning function and role which pervade not only modern science, but the whole modern intellectual world. His "tenuous almost to nullity" might well serve as its motto, or its epitaph.