The compensability of heart attacks continues to be probably the most prolific and troublesome problem in workmen's compensation law.

There is nothing complex about the typical fact situation. A worker whose customary duties involve lifting 100-pound sacks from a floor onto a platform suffers a heart attack immediately after one such exertion. Is this an "injury by accident arising out of and in the course of employment"? The range of precipitating events can be as broad and as varied as the entire spectrum of exertions or emotional conditions capable of contributing to the onset of a heart attack, from walking up a flight of stairs to engaging in a heated argument with a supervisor.

The gravity of this problem within the workmen's compensation system is not surprising. Given the dominant position of heart disease as a source of disability and death, the extent to which workmen's compensation assumes both medical and income maintenance responsibility for the victims of heart disease naturally has a heavy bearing on the comprehensiveness, cost, and ultimate direction of the system. Obviously if the heart attack is a genuinely work-connected injury, to deny compensation benefits would be a gross violation of the legislative purpose and of the workman's rights. It is equally obvious that, under the coverage clause quoted at the outset, compensation cannot be paid for every heart attack which happens to make its appearance during working hours. Thus, the task of the courts, armed with little more than this generally-worded coverage formula, has been to draw the line between the legitimate application of the Act and the indiscriminate distribution of compensation funds to almost all employed heart victims.

It is one of the great tragedies of the workmen's compensation story that almost all courts, in their perfectly justifiable search for a legal barrier that would keep compensation heart liability from getting out of hand, have seized upon the wrong component in the coverage formula. The words "by accident" or their equivalent were pressed into service for this task, and they have proved to be a most
ill-fitting tool for this function. If the courts had followed the more logical course of testing these cases by the causal principle prescribed by the words "arising out of the employment," there would still have been difficult evidentiary questions of medical causation, but we would have been spared the Niagara of intricate and frustrating decisions that have struggled with the intellectually unmanageable question: When does a heart attack occur by accident?

I. The Requirement of Accidental Injury

Since the heart cases rest almost entirely on the "by accident" provision in workmen's compensation statutes, we must begin by indicating briefly the present posture of statutory law. The requirement that the injury be accidental in character has been adopted either legislatively or judicially by all but six states. The usual phrase found in statutes containing the requirement is injury "by accident," a phrase taken from the original British Act. This phrase occurs in the statutes of thirty states. Nine states, the District of Columbia, and the Longshoremens' Act use the phrase "accidental injury." The Ohio Code introduces the "accidental" factor by defining injury to include "any injury, whether caused by external accidental means or accidental in character and result," while Montana and Washington choose different wording, the former preferring "from an unexpected cause" and the latter "a sudden and tangible happening, of a traumatic nature." In three states, Michigan, West Virginia, and Wyoming, the basic coverage clause does not contain an express accident requirement, but the word "accident" is used elsewhere in the statute, usually to fix the beginning of the period in which notice of injury must be given or claim must be made. The courts of these three states have read "accidental" into the coverage

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clause, although Michigan has all but read it out again. Texas also began to read accidental into the coverage clause but later held that the term “injury” covered all injuries whether accidental or not.

When we turn to the decisional interpretation of the “by accident” concept, we discover several components. The basic and indispensable ingredient of “accident” is unexpectedness. The first leading English case, Fenton v. J. Thorley & Company, embodied this factor in the following definition: “an unlooked for mishap or an untoward event which is not expected or designed.” Up to this point, it can be seen that there is nothing in the “accident” requirement which seriously circumscribes liability in heart cases. There would be almost no heart attacks which are “expected or designed” as the result of whatever the claimant was doing, for, if the claimant expected a heart attack or death as a result of his action, he presumably would have avoided the action. Indeed, the difficulties and the voluminous litigation that have swirled around the accident concept have flowed not from this common-sense dictionary meaning of “by accident,” but from two very questionable limitations or distortions of the term, limitations which may or may not have been consciously adopted in order to build a retaining wall around liability in heart and comparable cases.

The first of these two misreadings was the subtle conversion of the phrase “accidental injury” or the equivalent phrase “injury by accident” into the phrase “by an accident.” This is unjustifiable both as a matter of grammar and as a matter of statutory intention. In the original British formula, “personal injury by accident arising out of and in the course of employment,” and in the many statutes which have adopted this exact wording, the phrase “by accident” is clearly a modifier meaning the same as “accidental.” True, the

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7. See notes 30-43 infra and accompanying text.


The statement in Middleton v. Texas Power & Light Co., 108 Tex. 96, 185 S.W. 556 (1916), that the statute covered only industrial accidents, was intended merely to distinguish wilful injuries, the remedy for which was thought to be guarded by the Texas Constitution.


10. Id. at 448.

11. “It was held that ‘injury by accident’ meant nothing more than ‘accidental
wording in some state acts has been altered so that “accident” has become the noun, itself modified by the “arising” phrase, but this is not true of the formula in its original and most common version. Of course, having once rewritten the statute so as to read “by an accident,” the courts were then in a position to set forth on their endless search for “the accident” in heart cases and other situations in which there did not happen to be some obvious industrial mishap or highway collision.

An even greater source of difficulty in the heart cases has been the gratuitous insistence by many courts that the accidental quality of the episode be found in the cause rather than in the result. The most familiar manifestation of this insistence is the development of the “unusual-exertion” requirement for compensability in heart cases. To refer again to our original case of the man who has lifted 100-pound sacks many times a day and then suffers a heart attack while lifting one such sack in the usual way: It is evident that if a court construes the idea of an “untoward event” or “unlooked for mishap” as confined exclusively to the cause, that is, the outward circumstances immediately preceding the injury, nothing unexpected can be shown. But if accidental content can be supplied by the unexpected effect on this individual, then the injury can correctly be described as accidental.

This entire controversy should have been and could have been avoided if the courts had followed the well-settled doctrine that when a legislature adopts a statute which has already been authoritatively construed, it has adopted that construction. Well before any American states copied the “injury by accident” terminology of the British Act, it was settled beyond question in England that, although the cause of injury was routine and not accidental, a claim was compensable if the effect on the employee was unexpected and catastrophic, and therefore accidental. The House of Lords considered this exact situation in 1903 and again in 1910. In the latter case, the routine strain of tightening a nut caused an aneurysm to break, and this was held to be injury by accident. In February, 1912, Professor Bohlen wrote an article which was widely read as a guide....

to the drafting of compensation acts, pointing out these cases as establishing the authoritative meaning of the phrase. In spite of this background, however, a substantial number of American jurisdictions adopted the requirement that a heart attack, to be compensable, must have been produced by an exertion that was unusual for the particular worker.

The jurisdictions which allow recovery for heart attacks caused by usual exertion now outnumber by almost two to one those that require unusual exertion. This is not to suggest that the exact position of each jurisdiction can be classified with precision, but rather to give an overall impression of the present state of compensation law. Precision is impossible for many reasons, including contradictory decisions within jurisdictions, conflicts between abstract statements of rules and actual holdings on the facts, and assorted variants, exceptions, and distinctions that defy classification. With these preliminary caveats, one may hazard the statement that heart attacks from usual exertion may be compensable under federal decisions, and in twenty states, while twelve jurisdictions still appear to require unusual exertion.

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Illinois: Bruno v. Industrial Comm'n, 31 Ill. 2d 447, 202 N.E.2d 13 (1964); Clifford-Jacobs Forging Co. v. Industrial Comm'n, 19 Ill. 2d 236, 166 N.E.2d 582 (1959); Laclede Steel Co. v. Industrial Comm'n, 6 Ill. 2d 296, 128 N.E.2d 718 (1965); Bethlehem Steel Co. v. Industrial Comm'n, 6 Ill. 2d 290, 128 N.E.2d 714 (1955); Town of Cicero v. Industrial Comm'n, 404 Ill. 497, 83 N.E.2d 354 (1949).


Kentucky: Johnson v. Stone, 357 S.W.2d 844 (Ky. 1962). See also Grimes v. Goodlett & Adams, 345 S.W.2d 47 (Ky. 1961); Terry v. Associated Stone Co., 334 S.W.2d 926 (Ky. 1959); cf. Nashville Coal Co. v. Epley, 350 S.W.2d 423 (Ky. 1961); Salmon v. Armco Steel Corp., 275 S.W.2d 590 (Ky. 1955); H. Smith Coal Co. v. Marshall, 245 S.W.2d 40 (Ky. 1951).


Maine: Taylor's Case, 127 Me. 207, 142 Atl. 730 (1929).


II. THE MICHIGAN EXPERIENCE

Before undertaking an analytical judgment concerning the optimum working rule for heart cases, one may first set the stage by tracing in detail two of the more interesting attempts by states to arrive at a solution. The Michigan experience is significant because it provides one of the most dramatic illustrations of the over-all trend in the heart cases. Michigan began establishing restrictions based on the “accident” concept without even having a “by accident” limitation in its basic statutory coverage clause. However, in


Utah: The heart cases in Utah which appeared to require overexertion have been expressly superseded by the generally-applicable rule laid down in Purity Biscuit Co. v. Industrial Comm’n, 115 Utah 101, 201 P.2d 961 (1949), an intervertebral disc award.

West Virginia: Gilbert v. Compensation Comm’r, 121 W. Va. 10, 1 S.E.2d 167 (1939).


Florida: Friendly Frost Used Appliances v. Reiser, 152 So. 2d 721 (Fla. 1963); cf. Gray v. Employers Mut. Liab. Ins. Co., 64 So. 2d 650 (Fla. 1953), which accepted the unexpected-result rule.


common with two other jurisdictions, Michigan read the "accidental" requirement into the coverage formula anyway, and, so equipped, proceeded to develop a typical line of cases denying compensation in the absence of unusual exertion. For example, compensation was denied for heart attacks suffered by a salesman while driving in a snow storm, a fire warden while performing his duties, and an employee while testifying in court.

At the same time, Michigan, like every other jurisdiction with the unusual-exertion requirement, was occasionally producing a case which gave the unmistakable impression of clutching at straws in order to save awards by finding unusualness in the most trivial circumstances. For example, in Schlange v. Briggs Mfg. Co., a coronary thrombosis was attributed to the workman's "performing his usual work in an unusual manner and with the exertion of unusual force." The unusualness arose from the fact that the workman was using a round collet instead of a hexagonal one to hold a hexagonal fixture, and extra effort was required because of the tendency of the fixture to slip.

An important part in the unfolding Michigan story was contributed by the legislature in 1943 when it removed all but five of the fifty-four uses of the word "accident" in the Act and introduced the "single-event" test. One of the few places from which the accident

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19. See note 6 supra.
concept was not removed was the title, where the reference to compensation for accidental injuries was retained. After a period of some uncertainty, the Michigan Supreme Court specifically concluded, by a vote of five to three, that accidental injury was still required despite the 1943 amendments.\(^{25}\)

Coming changes in legal doctrine are often heralded by a persuasive dissenting opinion. In the Michigan heart cases, this function was performed by the dissenting opinion of Justice Smith in *Wieda v. American Box Board Company*,\(^{26}\) a case in which the majority denied compensation for a coronary thrombosis. The dissent examined both the general effect of the 1943 amendments on the accident requirement and the specific application of the statute to unexpected-result and usual-exertion heart cases. As to the former, Justice Smith said:\(^{27}\)

> It will be observed that the insertion of the suggested word “accidental” has been rejected. It should also be noted that the same amendment undertook a wholesale excision of the words “accident” and “accidental injury,” from other portions of the act, and the substitution of the word “injury.”

As to the latter, he said that the word “accident” includes both the expected cause and the expected result,\(^{28}\) and he adduced the following quotation from the original English case of *Fenton v. J. Thorley & Company*:\(^{29}\)

> If a man, in lifting a weight or trying to move something not easily moved, were to strain a muscle or rick his back, or rupture himself, the mishap in ordinary parlance would be described as an accident. Anybody would say that the man had met with an accident in lifting a weight, or trying to move something too heavy for him.

The decisions which finally reversed the Michigan rule were not heart cases, but there was never any doubt that the heart cases were embraced within the new principles established in *Sheppard v.*

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\(^{26}\) 343 Mich. 182, 72 N.W.2d 13 (1955).

\(^{27}\) Id. at 203, 72 N.W.2d at 24.

\(^{28}\) Id. at 196, 72 N.W.2d at 19.

\(^{29}\) [1903] A.C. 443, at 446. For previous discussion of Fenton, see text accompanying notes 9 & 10 *supra*. 
Michigan National Bank and Coombe v. Penegor. Sheppard involved a back injury which occurred when claimant tugged at a tray of cards weighing about twenty-five pounds. Coombe involved a cerebral hemorrhage and stroke resulting from the claimant's strenuous but usual exertion in fastening logs onto a logging truck with chains. For anyone having more than a passing interest in this topic in Michigan, the eighty pages of opinion, concurring opinions, dissenting opinions, and addenda in the report of these two cases are required reading. The reader's task will be lightened by the fact that there is a sense of high drama pervading these printed pages which shines through in some of the most vivid legal writing imaginable. The language of the battlefield repeatedly turns up in the opinions. Justice Black, in his first opinion in Coombe, after citing a number of conflicting opinions, asked: "Who is to say, until we do, which of these warring groups of decisions shall determine [the] applicability of part 7?" Again, in his opening opinion in Sheppard, Justice Black wrote:

Brazauskis (Brazauskis v. Muskegon County Board of Road Commissioners, 345 Mich. 480), the 4 to 4 deadlock of April 2d last, and now the misshapen 3-2-2 monster known as Beltinck's Case (Beltinck v. Mt. Pleasant State Home and Training School, 346 Mich. 494), unitedly prove the parable. Indeed, they liken us to the Etruscan array, faltering at Tiber's bridge. Here we stand, wavering from term to term, fearful of unvarnished avowal, pictured as by Macaulay's pen:

"But those behind cried 'Forward!'
And those before cried 'Back!'

Finally, Justice Edwards, concurring in Sheppard, on learning that a clear majority of the court had now appeared for the new rule, appended an addendum beginning with the cry of triumph: "Say not, the struggle naught availeth." What clearly emerges from the dust of battle is that the accidental quality of an injury in Michigan can now be supplied by an unexpected result, that unusual exertion is not indispensable in heart and similar cases, and that pre-existing weakness or disease

32. Id. at 640, 83 N.W.2d at 606.
33. 348 Mich. at 579, 83 N.W.2d at 627. The lines of poetry are from Horatius stanz 50, in Macaulay's LAYS OF ANCIENT ROME (1808).
34. 348 Mich. at 627, 83 N.W.2d at 636. The quote is the first line of Arthur Hugh Clough's, "Say not the Struggle Naught availeth," found in the OXFORD BOOK OF ENGLISH VERSE, 1250-1918, at 898 (Quiller-Couch ed. 1940).
does not alter this basic rule. What is not quite so clear is whether
the court has gone all the way in removing the accident requirement
from the statute, undoing what was started by the *Marlowe* case,\(^{35}\)
and what was given a new lease on life by the *Arnold* case.\(^{36}\) In
*Sheppard* and *Coombe*, all of the concurring justices except Justice
Edwards stopped short of announcing a blanket elimination of the
accident concept from the Michigan statute. There are a number of
statements to the effect that the 1943 amendments eliminated the
accident concept as previously interpreted by the court, and that the
concept was abolished once and for all insofar as it formerly re-
quired an accidental or unexpected cause. But Justice Smith, in his
concurring opinion in *Sheppard*, said:

Eula Sheppard and Ewart Coombe are each entitled to compen-
sation, not because we “eliminate” accident from the act, not because
of the presence or lack of a pre-existing ailment . . . but simply
because each suffered an unexpected mishap (an accident, in our
everyday speech) while doing his ordinary work in his ordinary way.\(^{37}\)

Justice Black, who wrote the primary opinion for the majority,
announced that he was signing this opinion of Justice Smith. The
opinions of Justice Edwards and Chief Justice Dethmers are design-
nated merely as “concurring,” i.e., presumably concurring with
the primary opinion of Justice Smith. Justice Kelly, in turn, concurred
with Chief Justice Dethmers, but in the process evenhandedly
divided his approval between those of the justices who accepted the
accident requirement and even extended it to require an accidental
result as well as cause, and of Justice Edwards, whom Justice Kelly
quoted as saying: “There is no longer a requirement that ‘an acci-
dent’ or ‘a fortuitous’ event (this court’s previous definition of ‘acci-
dent’) be proven as a condition precedent for recovery of workmen’s
compensation for a single-event personal injury which arises out of
and during the course of employment.”\(^{38}\) There is thus some ques-
tion of precisely what Justice Kelly concurred in.

This is not the end of the matter. In 1960, Justice Edwards found
himself in the position of writing the majority opinion in the case
which clearly applied the new doctrine to a heart attack, *Mottonen
v. Calumet & Hecla, Inc.*\(^{39}\) Understandably, Justice Edwards in-

\(^{37}\) 348 Mich. at 605, 83 N.W.2d at 626. (Emphasis supplied by the court)
\(^{38}\) Id. at 634, 83 N.W.2d at 640.
serted into the majority opinion of Mottonen his own interpretation of Sheppard and Coombe:

The Sheppard and Coombe Cases served to eliminate from construction of the Michigan workmen's compensation statute the former case-law requirement of proof of an accident ("a fortuitous circumstance") (see Arnold v. Ogle Construction Co., 333 Mich. 652) as a condition precedent to recovery of compensation where statutorily-required proofs were present.\(^{40}\)

Although this restatement of his own interpretation is not surprising, there may be some significance in the fact that Justice Edward's opinion was concurred in by three other justices, including Justice Smith, who said explicitly in Sheppard that the basis of the Sheppard and Coombe opinions was not that accident was "eliminated" from the act.

Although it is something of an anti-climax after this excursion through the byways of the judicial process, one must nevertheless observe that it probably does not make very much difference in heart and other strain cases whether one accepts Justice Edward's view that Sheppard and Coombe eliminated the accident requirement, or the more cautious interpretation that they simply established the unexpected-result and usual-exertion rules. This observation is supported by the Michigan Supreme Court's decision in Zaremba v. Chrysler Corporation,\(^{41}\) in which one final attempt to make the Sheppard and Coombe rule stop short of the usual-exertion test was firmly put down by the court. The Workmen's Compensation Board's interpretation of the cases was rejected and the court held that the exertion which caused disability or death did not have to be "strenuous" in character. The supreme court quoted from the Arkansas case of Bryant Stave & Heading Company v. White:\(^{42}\)

Notwithstanding anything we may have said in prior cases, we hold that an accidental injury arises out of the employment when the required exertion producing the injury is too great for the person undertaking the work, \textit{whatever the degree of exertion or the condition of his health}, provided the exertion is either the sole or a contributory cause of the injury. In short, that an injury is accidental when either the cause or result is unexpected or accidental, \textit{although the work being done is usual or ordinary}. [Emphasis by the Michigan Supreme Court.]

\(^{40}\) Id. at 660, 105 N.W.2d at 33.  
This quotation is followed by the statement: "It is difficult to tell from the 5 separate opinions [in Sheppard] exactly what the case stood for then and what it stands for now. If it does not stand for the foregoing quoted rule, I think it ought to." Four justices concurred in this opinion, while three justices concurred separately on the ground that the Commission was warranted in finding that the employee's work was unrelated to his heart attack. Consequently, for whatever the observation is worth, we now seem to have at least a five to three majority agreeing upon the meaning of Sheppard. So understood, the Michigan rule as to the range of heart and similar cases which are compensable as accidental injuries is now as generous as that of any jurisdiction in the country.

III. THE NEW YORK EXPERIENCE

The other state whose experience deserves detailed examination is New York. The history of what has happened in New York is of prime interest to any state which is still trying to apply the unusual-exertion test, because it shows what happens to that rule when a sufficient volume and variety of cases puts it to every possible test. The net result amounts to this: New York began with an emphatic requirement of unusual and even catastrophic cause, but, by a gradual decrease in the "unusualness" of the unusual cause required, it reached a point where, in effect, any heart attack to which the employment contributed seemed to be held accidental; then, apparently impressed by the need for some principle that would keep heart case liability from being virtually unbounded, it added an alternative test—the strain must have been "greater than the ordinary wear and tear of life."

A. The Results in New York

The New York story may be opened with the following quotation from an opinion by Judge Pound, speaking for a unanimous Court of Appeals in Lerner v. Rump Brothers:

43. Zaremba v. Chrysler Corp., supra note 42, at 231, 139 N.W.2d at 748.
44. 241 N.Y. 153, 155, 149 N.E. 334, 335, 41 A.L.R. 1122 (1925). In Lerner, from which this quotation is taken, decedent caught a cold as a result of spending ten minutes in a refrigerator, following which he died of causes traceable to the lowered resistance produced by the cold. Compensation was denied for want of anything catastrophic or extraordinary. By contrast, in Matter of Connelly v. Hunt Furniture Co., 240 N.Y. 83, 147 N.E. 366 (1925), cited in the quotation, an undertaker's assistant contracted an infection through a cut finger which spread through contact with a pimple on his neck. This episode was held to be accidental in all its phases.
A distinction exists between accidental injury and disease, but disease may be an accidental injury. The exception arises out of abnormal conditions which must be established to sustain an award. Two concurrent limitations have been placed on the right to recover an award when a disease, not the natural and unavoidable result of the employment, is developed during the course of the employment, although it does not follow that compensation should be awarded in all cases coming literally within these limitations. First, the inception of the disease must be assignable to a determinate or single act, identified in space or time. (Matter of Jeffreyes v. Sager Co., 198 App. Div. 446; 233 N.Y. 535) Secondly, it must also be assignable to something catastrophe or extraordinary. (Matter of Connelly v. Hunt Furniture Co., 240 N.Y. 83).

In the heart cases, the issue almost from the start centered on the question whether there was anything unusual about the exertion producing the attack or about the circumstances surrounding it. In 1935, compensation was denied to an employee who collapsed and died shortly after having performed a routine job of lifting and moving merchandise in a store basement. But, in 1939, an award to a truck driver who died of a heart attack from the strain of cranking his truck was unanimously affirmed; the catastrophic or unusual element seems to have been supplied by the fact that the condenser and distributor on the truck had burned out. The next year, compensation was denied for the death of a blacksmith who, because of icy weather, carried his tools three blocks to a stable instead of having the horses come to the shop. And in 1941, compensation was similarly denied to an employee whose heart attack was brought on by the exertion, normal in his work, of pushing an overhead tree loaded with 400 pounds of meat. Shortly thereafter, the courts became somewhat more willing to find that the activity causing the attack was “unusual.” In 1942, the heart attack of a housekeeper in an apartment house was deemed accidental since it followed her climbing four flights of stairs three times within fifteen or twenty minutes, the last time carrying a heavy mirror. In 1943, the looser “unusualness” rule was adum-

brated in the case of a furnace-stoker who collapsed after throwing a dozen shovels of coal, each weighing about forty pounds, on the fire. This was held to be an accidental injury, in spite of the fact that the shoveling was his regular job. During the next two years, a plant patrolman's coronary occlusion was found accidental because he had patroled an outside beat in extremely cold weather and during a heavy snowstorm (although his job was to patrol in all kinds of weather); the exertion of a fireman who ran up two flights of stairs, halfway down, and then up again was deemed "unusual," (although realistically it was surely a routine activity for a fireman); and the necessity of remaining in a cramped position for an hour to tamp new firebrick inside a boiler was deemed sufficient to convert a strain into an accidental injury.

Beginning with Cooper v. Brunswick Cigar Company in 1948, the newer view began to affect even the language of the opinions, in that reference to the unusualness of the exertion was sometimes altogether omitted. In Cooper, an award was made for the death of a trucker who, because he had no helper, had put in an unusually hard day, lifting cartons two at a time in order to save time. The Appellate Division's opinion said that "the board could find that the heart attack which caused the death was produced by the labor incident to the employment."

From 1948 on, a series of cases emerged which threatened to reduce the unusualness test to a hollow shell. In one case a painter had placed his ladder so that he had to stretch his arm "all the way out" in order to paint, and the Appellate Division held that the "extreme exertion and extension of his arms in painting" satisfied the requirement of accidental injury. In another instance, a deliveryman who suffered a heart attack while carrying a sixty-pound case of beer was granted compensation: the only non-routine feature in his case was the fact that the driveway on which he was walking was somewhat slippery. But—to show that the old requirement

55. Id. at 1038, 79 N.Y.S.2d at 867.
was still capable of defeating claims—in the same year and only nine
pages away in the same volume of reports, the same court denied
compensation for the death of a house superintendent who suffered
a coronary occlusion while carrying down stairs garbage cans which
weighed seventy pounds—ten pounds more than the beer case and
on stairs at that.58

Then came a series of cases which held that accidental injury
could be shown merely by proof that the decedent had been working
harder than he had worked at some time in the past. For example,
one claimant, upon being promoted to the responsible job of super-
vising construction of three new shops, worked long hours seven
days a week for nine or ten months, experiencing heart symptoms
from time to time. The Appellate Division found this assignment to
be “unusual work,” and held that “claimant sustained accidental
injuries arising out of and in the course of employment due to long
and arduous hours of work.”59 In 1949, an inspector was brought
within the protective orbit of “accident” solely because “the work
done by claimant had about a month earlier been changed so that
fewer men were doing the same volume of inspections which in-
creased claimant’s physical effort.”60 In other words, a strain which
had been usual and routine for a month was an “accident” because
a month earlier the claimant had had lighter work.

By 1950, the Court of Appeals apparently felt it had had
enough of this sort of thing, and, in Masse v. James H. Robinson
Company,61 while awarding compensation to a man who had
undergone unusually arduous work during the week preceding
a heart attack which occurred at home, it made the following
unqualified statement: “A heart injury such as coronary occlusion
or thrombosis when brought on by overexertion or strain in the
course of daily work is compensable, though a pre-existing pathology
may have been a contributing factor.”62 Nothing was said about
unusual strain; the language indicated that recovery would be per-
mitted not only for overexertion, but also for “strain in the course
of daily work.”

Later in the same year, while finding compensable the effects of

N.Y. 604, 81 N.E.2d 392 (1948).
aff’d, 301 N.Y. 754, 92 N.E.2d 629 (1950).
61. 301 N.Y. 34, 92 N.E.2d 56 (1950).
62. Id. at 37, 92 N.E.2d at 57.
spending five or ten minutes in the usual cramped position a steam fitter has to assume while working on the inside of a boiler, the Appellate Division summarized New York law from Lerner to Masse:

Appellants . . . cite the definition of an accident as something extraordinary or catastrophic, assignable to a determinate or single act, identified in space or time. [Citing Lerner.]

As an abstract legal proposition undoubtedly this definition is unassailable. However whether an event is to be found an industrial accident is not to be determined by legal definition "but by the common-sense viewpoint of the average man.” [Citing Masse.] Hence the issue almost invariably falls within the realm of fact, and if the facts and circumstances sustain, upon any reasonable hypothesis, the conclusion that an average man would view the event as accidental, then the determination of the Board is final. We think such determinative facts and circumstances were presented in the instant case, and that common men would regard decedent's injuries as accidental. At least we cannot say as a matter of law that such is not the case. Applications of this principle, though often not expressed, are inherent in many decisions.63

There is something indescribably poignant about the periodic efforts of highly-trained legal minds to dispose of intricate and troublesome questions of law by invoking "the common-sense viewpoint of the average man.” Would the average man who saw a steam fitter crouched in his usual position or a carpenter operating a mortising machine in the usual way view the resulting injuries as “accidental”? The plain fact is that the viewpoint of the average man would quickly eliminate the entire tortuous usual-unusual exertion distinction, since it is not common sense to equate the merely unusual with the accidental.

It is salutary at this point to recall the words of Lord Coke, Chief Justice of England in the early seventeenth century, responding to King James I's statement that the law was founded upon reason, that the King as well as the judges possessed reason, and that the King might therefore remove from the judges any causes he pleased and decide them himself. Lord Coke answered:

[T]rue it was that God had endowed His Majesty with excellent sciences and great endowments of nature; but His Majesty was not learned in the laws of his realm of England, and causes which concern the life or inheritance, or goods or fortunes of his subjects, are

not to be decided by natural reason but by the artificial reason and judgment of [the] law . . . .64

In the period following Masse, the “artificial reason and judgment of the law” again came into play, and in place of the permissive and vague “common sense” rule, there emerged a set of two, and perhaps three, discernible tests operating side by side. Before distilling these tests from the mass of reported cases, however, it might be useful to set forth in summary factual form the panorama of awards and denials since Masse.

The most common causal situation is that of a heart attack caused by lifting; awards have been based in whole or in part on lifting weights ranging from thirteen pounds to one hundred and fifty pounds.65 Cases in which awards have been made have involved the lifting of articles varying from four empty bottles,66 shoe boxes,67

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64. Conference between King James I and the Judges of England, Roberts’ Case, 12 Co. Rep. 65, 77 Eng. Rep. 1844 (K.B. 1612). Note that in 1612 the word “artificial” did not carry the somewhat derogatory implication it conveys today. It was a complimentary word, connoting highly-developed skill, learning, and inventiveness. For example, note the inscription preceding the Sixth Pavin in ROBERT DOWLAND, VARIETIE OF LUTE LESSONS (1610): “composed by the most artificiall and famous Alfonso Terrabasco of Bologna.”


and an armful of dishes, to heavy barrels, hot steel billets, and an accident victim. Other types of exertion represented in successful cases include changing a tire, removing an automobile bumper, working in an awkward or cramped position, and general heavy strain. On the other hand, recovery has been denied in cases involving the lifting of things varying from a four to six pound briefcase to a fifty-pound nail keg. Compensation has also been denied for heart attacks attendant upon the work

of cutting and attaching pipe, and upon the normal work of a mechanic.  

Another common cause of heart attacks encountered in compensation cases is climbing. There have been numerous awards involving heart attacks caused by climbing both stairs and ladders, although there have also been some denials of claims arising out of such circumstances.  

An increasingly prolific category of cases is that in which the causative element is found in excitement, fear, anger, worry, nervous strain, or tension caused by overwork, rather than in some physical exertion. Among the fact situations that have grounded awards are: an unusually heavy and strenuous period of litigation for an attorney; the emotional strain of possible removal for failure to meet a project deadline coupled with worry about incurring excessive costs; an argument with the employee’s superior; the excitement of a night watchman observing suspicious acts of two men; and the

strain of attempting to avoid a traffic accident. Perhaps because of the somewhat more elusive nature of emotional causation, the proportion of denials of recovery is higher in this category than in the others. Thus, there are unsuccessful cases involving hard-working attorneys, emotion-ridden bookkeepers, and tension-racked business executives. In addition, there are a number of frustrated claims which were based on arguments and altercations.

This catalog of heart cases arranged according to factual background may be concluded by a brief reference to a category which—at least as to its ability to satisfy the “by accident” concept—is one of the least controversial: that in which the heart failure is associated with some obvious mishap, such as a trauma, a fall, or a slip.

B. The Legal Tests

We are now ready to attempt to decipher the pattern of legal tests that lies buried in this mass of cases. These tests are to be found partly in the occasional efforts of the New York courts to verbalize their rules and partly in the mosaic made by their actual decisions, a large proportion of which announce a result based on the particular facts without providing any specific articulation of the legal principle which is being applied.

The clue to understanding the current state of the law in New York is the realization that, while the courts still insist upon some kind of “unusualness” in the precipitating event, that unusualness can take at least two, and perhaps three, different forms. The word “unusual” is a relative term; the event must therefore be unusual

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in relation to some specified norm which is accepted as "usual." While a large number of New York cases use the word "unusual" without identifying the norm taken as "usual," there are a sufficient number of cases specifying the benchmark of "usualness" to support the following breakdown:

An event (exertion, excitement, etc.) is sufficiently unusual to impart accidental character if it is unusual in relation to any one of the three following norms:

(a) The employee's own usual work;
(b) The "wear and tear" of ordinary non-employment life; or
(c) The usual work of other employees.

The addition of test (b) is the most significant development since the Masse case in the refinement of the New York rule. The test seems to be traceable to the case of Burris v. Lewis,97 which demonstrated that, while Masse would permit an award even though the claimant had merely been engaged in his regular duties, Masse did not open the floodgates to permit awards for the results of any exertion, however ordinary. Rather, the New York Court of Appeals read Masse as meaning that an exertion which was regular and routine in relation to an employee's usual employment duties could be the basis of an award if, and only if, it was greater than the ordinary wear and tear of non-employment life.98 The court also scrupulously insisted on the medical causation factor by adding that the heart attack must be shown to have been caused by the unusually hard work thus demanded.

The Masse case decided that the precipitating cause need not be something more strenuous than the normal performance of the work demanded, provided that the ordinary course of the work was sufficiently strenuous to require more than normal exertion. But where, as here, a heart has deteriorated so that any exertion becomes an overexertion, where the mere circumstance that the employee was engaged in some kind of physical labor is what impels the doctor to testify that his work caused his death, we would have reached a point, if this award were to be upheld, where all that is necessary to sustain an award is that the employee shall have died of heart disease.99

99. 2 N.Y.2d at 326, 141 N.E.2d at 426.
The “wear and tear” rule has been pressed into service in New York since 1957 both to support awards and to defeat them. This test appears to be aimed essentially at distinguishing between heart attacks that are the result of the “natural progression” of heart disease and those that are not, and the distinction is sometimes explicitly phrased in these terms, both in awards, and in denials. However, it must be stressed that the “wear and tear” rule has not displaced the rule that heart attacks are compensable when caused by exertion greater than that normally required of the employee; the new rule merely supplements the old, or forms an exception to it. In other words, it is only necessary to appeal to the “wear and tear” rule when the facts show no more than regular exertion in the employee’s normal activities.

The fact that the new test is an alternative is amply demonstrated by the large number of awards that are still made on the basis of unusualness in relation to the employee's own regular work. This unusualness can take many forms. An obvious example is the case in which, at the time of his heart attack, the employee was engaged in duties that were themselves different from or in addition to his normal duties. Now and then an executive or salesman, not toughened to the demands of muscular exertion by his accustomed sedentary or verbal activities, has occasion to lift some object whose weight proves to be too much for him. But unusualness may also be found when the shift is from one kind of physical work to another, as from watering lawns to pitching leaves into a truck, or


from a carpenter's repair and alteration work to the operating of a mortising machine.\textsuperscript{106} In one interesting case, the comparison was made not with the normal demands of the employee's present job, but rather with the demands of his previous job; an award was accordingly made for the death of a bulldozer operator who, two weeks earlier, had the less strenuous job of an oiler.\textsuperscript{107} Somewhat less obviously unusual is the performance of a task or exertion which, while not of frequent occurrence, does recur with some degree of regularity. For example, one employee had extra duties each Wednesday evening and had a fatal heart attack after one such evening's work.\textsuperscript{108} Another had a heart attack as the result of an activity he normally undertook once a month.\textsuperscript{109} Compensation was awarded in both instances. It is thus quite clear that unusualness may be a matter of degree, as well as of kind.\textsuperscript{110} It may appear in the duration,\textsuperscript{111} strenuousness,\textsuperscript{112} distance,\textsuperscript{113} or other circumstances\textsuperscript{114} involved in the execution of routine assignments.

Three norms were mentioned above as operating side by side when the usualness of an exertion is determined in New York: the employee's own normal strain; the wear and tear of non-employment life; and the normal strain of other employees. The vast majority of the cases fall within the first two categories. The third is illustrated by a pair of cases involving emotional strain. In one, the heart failure was allegedly caused by the employee's argument with a superior. Compensation was denied on the express ground that the emotional

\textsuperscript{111} Martinelli v. Metropolis Trucking Co., 8 N.Y.2d 806, 168 N.E.2d 254 (1960).
strain involved was no greater than that to which all workers are subjected.116 Three years later, in another case involving an argument with a superior—this one conducted through an intermediary located midway between the parties—compensation was awarded on the express ground that there was "greater emotional strain or tension than that to which all workers are occasionally subjected."116 It is difficult to see how a test based on the "normal strain of all other employees" could be successfully extrapolated beyond the immediate fact situation, that of emotional stress growing out of a work argument. Even in that situation, it is a questionable norm; for is there some fixed measurable quantity of emotional tension common to all employments? In any event, there is plainly no such fixed quantity as to physical exertion, such as lifting or climbing. In short, it is doubtful that the already complex law as to the compensability of heart attacks is enriched or clarified by adding this third norm to the tests based on the employee's own normal strain and on the stress of non-employment life.

IV. A CRITICAL APPRAISAL

We have traced in some detail the experience of one major jurisdiction which abruptly reversed its rule from the unusual-exertion rule to the usual-exertion and accidental-result formula, and of another major jurisdiction which has demonstrated both the problems created by the unusual-exertion test and the need for a more sophisticated criterion. We may now attempt a critical appraisal of the competing doctrines. The central question is whether the unusual-exertion test is a valid and workable test by which to determine the accidental character of an injury. It is subject to criticism on three grounds.

The first is its assumption that the accidental character of an injury must be found in the cause rather than in the result. Except when express statutory language inserts some such requirement,117 there is nothing in the "accident" concept which demands this limitation, and, as shown above, the accidental-result interpretation

117. The 1961 amendments to Mont. Rev. Codes Ann. § 92-418 (1947) define an injury as happening "from an unexpected cause." The prior wording referred to "some fortuitous event." See also statutes expressly adopting the unexpected or accidental result theory: "[A]ccident' shall mean only an unexpected or unusual event or result." FLA. STAT. § 440 (1965). Ohio has defined injury as: "any injury, whether caused by accidental means or accidental in character and result." OHIO REV. CODE ANN. § 4123.01 (Page 1965). (Emphasis added.)
was already well embedded in the phrase “by accident” by the time the phrase was taken over by the states from the British Act. 118 Georgia is a good example of a state which has carried to its ultimate expression the reasoning that an unexpected result is sufficient to supply the accidental element, whether the cause is extraordinary or not. 119 It adopted the following formula: “An accident arises out of the employment when the required exertion producing the accident is too great for the man undertaking the work, whatever the degree of exertion or the condition of health.” 120 In one case in which this rule was applied, the Georgia court actually deemed accidental a heart failure following exertion which was lighter than usual, since the exertion did in fact precipitate the attack. 121 In this case, the decedent had asked to be put on less strenuous work because he was not feeling well, and at the time of his death he was only carrying one-by-four boards, none of which weighed over twenty pounds—about the weight of a portable typewriter or a pail of water. Yet it was established by the medical testimony that, because of his extremely bad heart condition, even this exertion was capable of precipitating the collapse. In the same month, Georgia also awarded compensation for a heart attack suffered five minutes after a bookkeeper had walked up a single flight of stairs to his office. 122

The second criticism of the unusual-exertion requirement—an equally elementary criticism going to the plain meaning of the word “accident”—involves the assumption that whatever is unusual is accidental. Whether one takes the everyday colloquial meaning or the most technical dictionary meaning of the term accidental, this assumption is not true. Whether a thing is accidental depends on whether it is unexpected or unintended. One can deliberately do the unusual and one often does. If an employee intentionally and knowingly undertakes to lift an unusual load, the lifting is no more accidental than if he had deliberately lifted a normal load. Or if a gardener deliberately continues to mow the lawn in the rain, an observer would not say that the gardener was experiencing an accident merely because it is unusual to mow lawns in the rain. Yet on

118. See notes 13-15 supra and accompanying text.
this broken reed—the identification of unusual with accidental—
lean the hundreds of cases that have swollen the compensation re-
ports with distinctions between the usual and the unusual in working
conditions.

The third criticism is that, in practice, the usual-unusual distinc-
tion is unworkable. The distinction assumes that there is a quantum
of exertion or exposure in any occupation which is usual or normal
—an assumption which is questionable at best, and certainly difficult
to apply. Any employee looking forward to his coming year’s work
knows that he will work long hours as well as short hours, in cold
weather as well as hot, sometimes faster and sometimes more
slowly. The butcher will lift both light and heavy sides of beef,
and one day he will encounter the heaviest side of beef he has lifted
all year. Will that be a usual lift? The fireman will have easy fires
difficult fires; the loader will lift little boxes and bigger boxes
and biggest boxes; the policeman will arrest complaisant drunks and
difficult drunks. None of this is either unusual or unexpected;
yet a surprising number of cases will hold an exertion unusual when
it is nothing more than the heaviest part of the claimant’s usual
work.

Holmes’ statement that the life of the law has been not logic but
experience is probably truer in compensation law than in any other
field. Although most of the law built up around the “accident” re-
quirement, for example, has been based on false premises and em-
broidered with irrelevant distinctions, there has been a utilitarian
purpose behind it all which cannot be disregarded when all of the
logical criticisms have been exhausted. That practical considera-
tion is the fear that heart and related cases will get out of control,
and will become compensable whenever they take place within the
time and space limits of employment, unless some kind of arbitrary
boundaries are set. Most states have chosen to press the “accident”

124. See Walsh v. United States Rubber Co., 238 S.C. 411, 120 S.E.2d 685 (1961), in
which the claimant suffered a heart attack. The court found that continual interrup-
tion by the claimant’s superiors, who ordered him to abandon his usual duties as stock-
man in order to fetch special materials, constituted unusual exertion when he tried to
“double-up” in order to get his regular work done by the end of the day and compen-
sation was awarded.
125. Industrial Comm’n v. Luger, 54 Ohio. App. 148, 6 N.E.2d 573 (1936) (held,
accidental).
(held, accidental).
(1938), in which compensation was awarded because, although dumping cars was the
miner’s usual work, it was the hardest part of it.
concept into service as one of these arbitrary boundaries, but, with a few exceptions, one gets the impression that what is behind it all is not so much an insistence on accidental quality for its own sake as the provision of an added assurance that compensation will not be awarded for deaths not really caused in any substantial degree by the employment.

Unfortunately, the unusual-exertion requirement is a clumsy and ill-fitting device with which to ensure causal connection, although it undoubtedly does frequently rule out cases in which work-connection is questionable. The fallacy of testing work-connection by a comparison of a man's particular fatal exertion with his usual exertion is that, in many occupations, even the usual exertion is clearly capable of causing the heart collapse. Conversely, in many occupations the usual exertion requires so little effort that, even when it is exceeded, it is medically improbable that the "unusual" exertion could cause heart failure. It is not as though continuous heavy work over a long period produced a strong heart, while desk work for the same period resulted in a weak heart. The longshoreman and the salesman may have hearts which, weakened by disease, are no different in their ability to withstand strain. In *Philadelphia Dairy Products Company v. Farran*, a salesman indulged in the (for him) unusual effort of carrying a fifteen-pound parcel, while the claimant in *Marlowe v. Huron Mountain Club* lifted 200-pound sacks of mail, which for him was routine. Farran got compensation; Marlowe did not. The point is that, as a matter of medical causation, the only question is the ability of the particular strain to affect the particular diseased heart; the character of the claimant's previous exertions is of much less relevance to this issue than is the medical question whether, given this heart and this exertion, the exertion in fact contributed to the collapse. One would assume that a causal connection could more readily be shown when the object lifted was 200 pounds than when it was fifteen.

**V. A Suggested Solution**

The beginning point in any attempt to articulate a sound working rule for the heart cases is the recognition of the fact that, while limits must be put on heart liability, the essence of the problem

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128. 44 Del. 380, 57 A.2d 88 (Super. Ct.), aff'd, 44 Del. 437, 61 A.2d 400 (Sup. Ct. 1948).
129. 271 Mich. 107, 260 N.W. 130 (1935). *Marlowe* was decided under the earlier Michigan rule. See notes 6 & 7 *supra* and accompanying text.
is causation. The fact that an increasing number of jurisdictions accept this beginning point is a step in the right direction, but there is one additional preliminary step which is indispensable to an orderly analysis, and that is to recognize that the causation question has two distinct parts: the legal and the medical. The law must define what kind of exertion satisfies the test of "arising out of the employment"; then the doctors must say whether the exertion which has been held legally sufficient to support compensation has in fact caused the heart attack. All too often these two tests are scrambled together. When this happens, the courts usually lose sight of one of them. Thus, obsession with the legal test of unusual exertion may lead to a holding that a very slight exertion, because it satisfies the legal test in that it is unusual for the particular employee, is adequate to support an award, although its ability to account medically for the collapse seems remote. Conversely, obsession with medical causation sometimes leads to a slighting of the need for precision in defining the legal rule, with the result that decisions may be based on statements by doctors that an exertion did or did not cause a heart attack, although neither the doctors nor the lawyers may have had a clear concept of what the term "cause" meant in this setting.

The first task, then, is to state plainly the legal test of causation. If we can keep to one side the complications that have been introduced by attempts to cram this problem into the "accident" mold, we will see that the causation issue can be solved by invoking the distinction which exists in compensation law between neutral-risk situations (where there is no obvious personal or employment element contributing to the risk) and personal-risk situations (where a personal risk contributes to the injury, although perhaps in a relatively small degree). As to situations which do not involve any personal risk element, the better rule goes beyond the old rule, which demanded that the employment contribute an increased or peculiar risk, and accepts actual risk, or even positional risk. The reason is that there is no competing personal risk to overcome. Any employment contribution, even merely putting the employee in the place where the injury from a neutral force occurred, is enough, because it is greater than the zero employee contribution. But when the employee contributes some personal element of risk — e.g., by having a personal enemy who assaults him, or a personal

131. Id. §§ 8.43 & 9.40.
132. Id. § 10.
133. Id. § 11.23.
disease which figures causally in his injury— the employment must contribute something substantial to increase the risk. The reason is that the employment risk must offset the causal contribution of the personal risk. The result in idiopathic fall cases in most jurisdictions is that there is no compensation unless some height or object associated with the work adds to the risk.

In heart cases, the effect of applying this distinction between neutral-risk and personal-risk situations would be clear. If there is some personal causal contribution in the form of a previously weakened or diseased heart, a heart attack would be compensable only if the employment contribution takes the form of an exertion greater than that of non-employment life. Note that the comparison is not with this employee’s usual exertion in his employment, but rather with the exertions present in the normal non-employment life of this or any other person. On the other hand, if there is no personal causal contribution, that is, if there is no prior weakness or disease, any exertion connected with the employment and causally connected with the collapse as a matter of medical fact would be adequate to satisfy the legal test of causation. This is the heart-case application of the actual risk test: this exertion in fact causally contributed to this collapse. In both situations, whether or not there was prior personal weakness or disease, the claimant would also have to show that medically the particular exertion contributed causally to the heart attack.

To highlight the difference in practice between the old unusual-exertion test and the suggested rule, let us postulate two extreme cases. Suppose first that X’s job involves the frequent lifting of 200-pound bags, and that one such 200-pound lift medically produces a heart attack. Under the old unusual-exertion rule there would be no compensation, regardless of any previously existing heart condition, because the activity was not unusual for X. Under the suggested rule there would be compensation, even in the presence of a history of heart disease, because people generally do not lift 200-pound weights as a part of non-employment life, and therefore the employment contributed a strain which was beyond the ordinary wear and tear of life. At the other extreme, suppose that Y’s usual job in-
volves no lifting. Suppose he lifts a fifteen-pound weight on the job, and suppose there is medical testimony that this lift caused his heart attack. Under the old test, which was concerned exclusively with the comparison between an employee’s usual exertions and the precipitating exertion, there would be compensation.137 Under the suggested rule, the result would depend on whether there was a personal causal element in the form of a previously weakened heart. If there was no history of heart disease, compensation would be awarded since the employment contributed something to the employee’s collapse and his personal life contributed nothing. If the employee had a previously weakened heart, compensation would be denied in spite of the medical causal contribution of his employment, because legally the personal causal contribution was substantial, while the employment added nothing to the usual wear and tear of life—which certainly includes lifting objects weighing 15 pounds, such as bags of golf clubs, step ladders, or sets of The Law of Workmen’s Compensation (with Annual Supplement).138

The suggested rule has borrowed from the most recent New York test, the “wear and tear” concept. The decisive advance over the old unusual-exertion test is the alteration in the norm of exertion with which the precipitating exertion is compared. The old norm was the particular employee’s usual exertion. The new norm is the exertion of ordinary non-employment life. What New York now must do, in order to bring its heart case story to an orderly conclusion, is hold that the “wear and tear” rule applies only in cases of prior heart weakness, adapt its own actual-risk test to all other cases by giving awards in these cases for heart attacks caused by usual exertion, and sweep away the vestiges of the old unusual-exertion-for-this-employee test.

As for Michigan, its energies have been so thoroughly devoted to the one gigantic effort of throwing off the unusual-exertion requirement that it has hardly had time to face the more subtle problems of keeping the heart cases within appropriate bound-


138. It is this feature that distinguishes the proposed rule from the rule that accepts in all heart cases any exertion as long as medical causation is shown. In other words, under the proposed rule, there will be cases in which employment exertion was medically capable of accounting for the collapse, and in which denials will nevertheless result because the exertion does not rise above the “wear and tear of life” level. See, e.g., Di Cicco v. Liebmann Breweries, Inc., 11 App. Div. 2d 613, 201 N.Y.S.2d 128 (1960), in which medical testimony that any effort would trigger the fatal attack resulted in the court denying the compensation award because the ordinary wear and tear of life would have produced the same result.
aries without the aid of the unusual-exertion test. However, one point should be emphasized immediately to dispel any apparent inconsistency between the proposed solution and some passages in the Sheppard case. In that case, the Michigan Supreme Court went to considerable lengths to denounce and destroy the distinction between cases involving previous disease and weakness, and cases involving previously healthy claimants. However, it condemned this distinction specifically for the purpose of demonstrating, quite correctly, that there should not be a difference in the "by accident" rule applicable to the two types of cases. The point of the distinction between previously healthy and previously diseased claimants in the rule suggested in this article is purely one of causation. Clearly there should not be one "by accident" rule for workers with prior heart disease and another for those with no such history. Equally clearly, it would be unrealistic to deny that the presence or absence of pre-existing heart disease has relevance in determining whether the final heart collapse was causally related to the employment or occurred merely by coincidence during working hours. If the workman had a previously healthy heart, the question whether the heart attack was simply the result of the natural progression of the disease could not arise, while, in a case involving advanced heart deterioration, the causal contribution of the personal pre-existing disease may loom so large that it blots out any possible finding of employment causation.

After the resolution of this question about Sheppard, there should be no particular difficulty in adopting the suggested rule in Michigan. The controversial cases until now have been wrestling primarily with the accident concept and can be distinguished on that ground, whereas the suggested rule constitutes merely an adaptation and refinement of basic principles drawn from the words "arising out of . . . employment." Indeed, the same route for the adoption of the proposed rule is open to practically every other jurisdiction, whether it has already accepted the usual-exertion test or whether it is merely ripe for such a change.

It must be recognized that the proposed rule raises one problem: in close cases a great deal necessarily turns on the question whether there was a pre-existing disease or weakness. If, as in a large proportion of claims, there is a provable history of heart disease, the resolution of this question presents little difficulty. But when there is no provable history of heart disease, doctors may still say that there must have been such a history, on the theory that a healthy
heart could not have given way under the particular exertion.139 All that can be said here is that this has to be a determination of medical fact. Presumably the burden of proof would be upon the party alleging the existence of a prior heart condition as a fact essential to his case. More frequent use of autopsies, when possible, may be justified in cases in which this issue can be foreseen. Sometimes an autopsy can be distinctly helpful, as, for example, in the Burris140 case, where the autopsy revealed no new lesions—only old ones.

Under the proposed solution, the decisional law on heart cases should not be substantially different under a “by accident” statute than under statutes like those of California, Iowa, Massachusetts, Minnesota, Rhode Island, and Texas, which do not contain such words in their coverage tests.141 If any court is disposed to worry about whether abandoning the unusual-exertion test would “open the flood gates,”142 it might find reassurance in the fact that getting an exertion award in such states as California,143 Iowa,144 Massachusetts,145 Minnesota,146 and Rhode Island147 is no “pushover.” In those states, the difference is that the battle is avowedly fought on the fundamental causation issue.148

Up to this point, our concern has been with the first half of the

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139. See, e.g., the inconclusive posture of this question in Coombe v. Penegor, 348 Mich. 635, 83 N.W.2d 603 (1957). The question is not settled by the opinion itself, but we find the following reference to the problem in the opinion of Justice Smith in Sheppard v. Michigan Nat'l Bank, 348 Mich. 577, 604, 83 N.W.2d 614, 626 (1957):

A majority is also affirming Ewart Coombe's award. Did he have a pre-existing ailment? His attending doctor says he "must" have had. The appeal board says he "may" have had. The defendants say he did have. Notwithstanding, it is proposed that his award of compensation under part 2 be affirmed. Authority? Eula Sheppard's case. Apparently it is no longer critical whether there was a pre-existing "disease or condition" or not. We agree. It never was.


141. See note 1 supra.

142. See the comment of Judge Latimer in his dissent in Purity Biscuit Company that the rule in that case "opens the flood gates and every internal failure becomes an accident just because it happens." Purity Biscuit Co. v. Industrial Comm'n, 115 Utah 1, 30, 201 P.2d 901, 975 (1949).


144. See, e.g., Henker v. Drobney, 253 Iowa 421, 112 N.W.2d 672 (1961); Lindahl v. L. O. Boggs Co., 256 Iowa 296, 18 N.W.2d 607 (1945).

145. See, e.g., Herlihy's Case, 237 Mass. 232, 166 N.E. 556 (1929).


proposed causation test in exertion cases: the question of the degree of exertion necessary to satisfy the legal test of work-connection. We now come to the second half of the test: the question whether, as a matter of medical fact, the exertion contributed causally to the collapse. A good statement of the need for medical-factual causal connection has been supplied by the Supreme Court of Georgia:

[I]t must be shown by evidence, opinion or otherwise, that the exertion attendant upon the duties of employment, no matter how slight or how strenuous, and no matter with what other factors—such as preexisting disease or predisposition to attack—it may be combined, was sufficient to contribute toward the precipitation of the attack. Where evidence as to the work engaged in shows it to be sufficiently strenuous, or of such a nature that, combined with the other facts of the case, it raises a natural inference through human experience that it did so contribute, this is sufficient. In other cases, the opinions of experts that the exertion shown by the evidence to exist would be sufficient is also sufficient to authorize a finding on the part of the fact-finding tribunal that it did. But, in one way or another, the fact must appear.149

If heart failure overtakes the employee while he is waiting for a bus,150 or an elevator,151 or walking,152 or riding in a car,153 or doing routine clerical work,154 there simply may be no strain at all in the employment activity which could cause a heart attack. The natural progress of the disease may bring the disease to its fatal climax during working hours,155 but if the employee's activity at the time involves no effort, or effort which cannot medically support a causal connection, it can rightly be said that the outcome was not causally related to the employment.


Proof that employment was not a medical cause of a heart attack can be provided in several ways. There may be direct physical evidence, perhaps afforded by an autopsy, negating the existence of any new heart lesions or pathology. There may also be medical opinion evidence denying the causal connection. In such cases, under familiar rules, an appellate court will not disturb a denial of compensation. Or the medical testimony on which the claim rests may be too speculative or weak to meet the claimant's burden of proof. In fact, the medical situation may sometimes be impossible to analyze. In such a case, if unaided by evidence connecting the injury with the employment, the claim may fail.

It is difficult enough in the heart cases merely to apply medical theory to observed facts, but the difficulty is compounded by the persisting cleavage in medical theory itself on the relation of exertion to thrombosis. Cases continue to reach the appellate courts on records in which the medical testimony is certain that exertion

161. Trudenich v. Marshall, 54 F. Supp. 466 (W.D. Wash. 1940); see Chiara v. Villa Charlotte Bronte, 273 App. Div. 354, 76 N.Y.S.2d 59, aff'd, 290 N.Y. 604, 51 N.E.2d 332 (1949) in which compensation was denied for the heart attack incurred by a janitor while carrying 75-pound garbage cans down stairs. This decision, which is out of line with the main stream of the New York cases, is explained by the following excerpt:

The employer's physician said: "... physical effort is not the cause of coronary sclerosis and coronary sclerosis is the cause of coronary thrombosis, therefore there is no causal relation . . . . No, effort is not the cause of coronary occlusion, and there is no question that the patient had a coronary occlusion; there are cases just as often when coronary occlusion occurs, while people are at rest and sometimes in bed."

Id. at 354, 76 N.Y.S.2d at 60.

Even if, as some doctors often say, coronary thrombosis can just as well occur at home as in bed, it does not follow that a particular exertion or excitement did not contribute to it. See, e.g., Marotte v. State Compensation Ins. Fund, 145 Colo. 99, 357 P.2d 915 (1960), involving a policeman who was "shook-up" in a minor auto accident. Two days later, while still feeling "bad", he killed a garter snake for a group of excited women. Four days thereafter his own doctor diagnosed his condition as a myocardial infarction. The court awarded compensation and held that the fact that an infarction could occur while the claimant was at rest did not rebut the evidence that it occurred as the result of his employment. See also Bundy v. Concrete Ready-Mix Co., 130 Ind. App. 542, 167 N.E.2d 477 (1960), in which the medical expert, when asked whether physical strain could have caused the heart condition, testified that the answer was much debated. For those people under age 40, strain could be the cause, while, after
and emotion have nothing to do with coronary thrombosis, while most heart cases are based on the opposite theory.

However, although medical evidence in a particular case may be uncertain or deficient, this will not necessarily bar an award if the exertion, taken with other facts, raises a natural inference of causal contribution. In a recent New York case, the medical expert admitted that he did not know how a thrombus would occur in a normal, healthy blood vessel, or why the thrombosis and infarction had not occurred previously when the claimant had performed much more strenuous labor. Nevertheless, the court affirmed an award, saying that "the nonmedical facts thus present a classic case of industrial-accident heart attack."

This question of the medical relation of exertion to thrombosis is something that will have to be left to the doctors. Meanwhile, it is up to the lawyers, administrators, and judges who are concerned with heart cases in workmen's compensation law to put the legal house in order. It is hoped that the solution suggested here may help toward that end.

162. See Aromando v. Rubin Bros. Drug Sales Co., 47 N.J. Super. 286, 136 A.2d 11 (1957), in which compensation was awarded although there was a split in the medical testimony on whether unusual emotional stress could cause a coronary occlusion.


165. See Cole v. Industrial Comm'n, 144 Colo. 183, 355 P.2d 537 (1960), in which compensation was denied because circumstances tended to disprove any connection between the accident and the thrombosis.

166. Id. at 462, 200 N.Y.S.2d at 688.