A carpenter suffered an eye injury in the course of employment and was awarded workmen’s compensation. While recuperating at home, he cut off a finger sawing wood with a power saw, partly due to the defective vision resulting from the compensable eye injury. Should workmen’s compensation be payable for the loss of the finger? This set of facts, presented in the California case of *State Compensation Insurance Fund v. Industrial Accident Commission*, supplies an excellent testing ground for a troublesome problem in workmen’s compensation law: Given the existence of a compensable injury, how far does the range of compensable consequences extend that might in some sense be causally related to the original injury?

At the outset it must be noted that in this type of case there are two causation problems: causation rules that determine whether the primary injury was compensable, and causation rules that control how far the chain of compensable consequences is carried when the primary injury acts upon or is acted upon by subsequent events.

As to the primary injury, it is now universally accepted that the “arising out of the employment” test is a unique one, quite unrelated to common law concepts of legal cause. Plainly, if the original draftsmen of the compensation acts had meant to say “caused by the employment” they would have done so. The phrase is not only shorter than the “arising” phrase, but much more familiar. It would have come naturally to any draftsman, unless he really intended to say something different from “caused by.”

When one looks at the words themselves and asks what they really mean, it is instantly apparent that “arising out of the employment” does not mean exactly the same thing as “legally caused by the employment.” It is true, as many courts and writers have said, that “arising” has something to do with causal connection. But there are
many shades and degrees of causal connection, of which "legal" or "proximate" is only one. Taking the words themselves, one is struck by the fact that in the "arising" phrase the function of the employment is passive, while in the "caused by" phrase it is active. When one speaks of an event "arising out of employment," the initiative, the moving force, is something other than the employment; the employment is thought of more as a condition out of which the event arises than as the force affirmatively producing the event. In tort law the beginning point is always a person’s act, and the act causes certain consequences. In workmen's compensation law, the beginning point is not an act at all; it is a relation or condition, namely, employment. No one would suggest that the employer's only act, the act of hiring the employee, is the operative factor from which all consequences are to be traced. Thus it is clear that the early attempt to make "arising" equivalent to "causation" was blocked by the words themselves.

In addition, proximate or legal cause was seen to be out of place in compensation law because, as developed in tort law, it was a concept which was itself thoroughly suffused with the idea of fault; that is, it was a theory of causation designed to bring about a just result when starting from an act containing some element of fault. The primary test of legal cause in the United States is foreseeability. The essence of the actor’s fault is that, although the consequences of his conduct were foreseeable, he nevertheless carried on that line of conduct. The foreseeability of the consequences is an inextricable part of the fault character of his act.

But foreseeability has no relevance if one is not interested in the culpability of the actor's conduct. There is nothing in the theory of compensation liability that cares whether the employer foresaw particular kinds of harm. The only criterion is connection in fact with the employment, whether it is foreseeable in advance, or apparent only in retrospect.

Above all, the employee's own contributory negligence is ordinarily not an intervening cause preventing initial compensability.

When one turns to the question whether compensability should be extended to a subsequent injury or aggravation related in some way to the primary injury, most courts have adopted a quite different causation principle, based essentially upon the concept of "direct and natural result," and of the claimant's own conduct as an independent intervening cause.

A large proportion of the cases can be disposed of under this second rule of causation, with reasonably satisfactory results. In this
article these categories will be quickly passed over in order to get to the more controversial problem exemplified by the case of the carpenter described at the outset.

The simplest application of the secondary causation principle is the rule that all the medical consequences and sequelae that flow from the primary injury are compensable. The most obvious type of case is that in which the initial medical condition progresses into complications more serious than the original injury. The added complications are of course compensable. Thus, if an injury results in a phlebitis, and this in turn leads to a cerebral thrombosis, the effects of the thrombosis are compensable.\(^2\) The issue in these cases is exclusively the medical issue of causal connection between the primary injury and the subsequent medical complications.

Sometimes the causal problem in these medical causation cases is more complicated than this. For example, if the primary compensable injury makes it impossible to treat the independent condition, the worsening of the independent condition due to lack of treatment is compensable, as when an intestinal perforation followed by infection made it impossible to remove a preexisting cancer of the rectum.\(^3\) Similarly, when the compensable injury produces a condition that interferes with normal curative processes that might have alleviated the preexisting independent condition, the progression of the independent condition is compensable, as when a compensable skull fracture produced a mental condition in which the decedent could not feel and thus report the pain of an eventually fatal gall bladder infection.\(^4\) Here again the question is purely a medical one, although the causal sequence is somewhat less straightforward.

For present purposes, we may also pass over one range-of-consequences area which, although it produces a considerable volume of litigation on the facts, involves no significant legal problem. "The great majority of American courts now hold that aggravation of the primary injury by medical or surgical treatment is compensable, [and that] [f]ault on the part of the physician, even if it might amount to actionable tortiousness, does not break the chain of causation."\(^5\)

When we turn from these relatively simple cases of medical causa-


\(^5\) 1 A. Larson, The Law of Workmen's Compensation § 13.21, at 192.81-.83 (1968) [hereinafter cited as Larson].
tion to the broad question of miscellaneous consequences having some causal relation with the original injury, we enter an area of compensation law where the difficulty of expressing a body of coherent principles is at the maximum. A sampling of typical cases, in addition to the case of the carpenter with which we began, will indicate the nature and range of the questions involved: Claimant, while his leg is in a cast, impulsively tries to catch a child about to fall down the church steps at a wedding reception, and because of the cast falls down the steps himself; claimant, while his hand is healing from a compensable injury, deliberately engages in a boxing match, and aggravates his wound, which then becomes infected; claimant carelessly takes bichloride of mercury from a bottle labeled "poison" instead of the aspirin he meant to take to relieve the pain of a compensable injury; claimant, with his bandages soaked in alcohol because of a compensable injury, lights up a cigarette in violation of specific warnings and is severely burned; claimant slips and falls on the way from visiting the doctor for treatment of a compensable injury.

At the outset of this analysis, it is a salutary precaution to recognize that the legal principles involved are not capable of being reduced to some simple unitary formula. For example, it will not do merely to announce that the causation principle applicable to the range-of-consequences problem is the same as that applicable to the initial compensable injury, and that therefore the character of the claimant's conduct is no more relevant to the second injury than to the first. The California Court of Appeal that awarded compensation to the carpenter who cut off his finger at home partly because of a compensable eye injury, in the course of justifying its decision, went much further than necessary in this direction and fell into the error of equating completely the causal rules for the original and for the subsequent injury. The court said explicitly: "The fact that a workman suffers a secondary consequence of the first injury should not work a mystic change in the nature of the applicable test . . . ."12 It concluded that no intervening cause

12. Id. at 20, 1 Cal. Rptr. at 80.
could break the chain of causation unless it was the sole cause of the second injury, that is, unless the original injury contributed nothing whatever to the final result. Let us test this reasoning by applying it to a few fact situations.

A claimant whose arm was broken in a compensable accident decides to beat his wife on Saturday night at a time when the arm is not yet healed. The arm is refractured as a result of the weakness attributable to the compensable injury. A man with a normal, healthy arm could have beaten his wife in exactly the same way with no harmful consequences to himself. According to the California court the refracture would be compensable. Certainly the compensable weakness contributed to the refracture, and certainly the claimant's misconduct in deciding to beat his wife was not the exclusive cause of the refracture, since the blow would not have caused a refracture but for the compensable weakness. Quite apart from the merits of the actual result, something is obviously wrong with the simplistic formula adopted in this case.

Take another example. A claimant whose compensable injury is healing well, and who is receiving the finest medical care that science can provide, decides to consult a witch doctor in the woods. This doctor twists the claimant's neck producing total paralysis. Should the paralysis be compensable? The visit to the witch doctor was not the sole cause of the harm. The visit would never have been made but for the compensable injury, and it was the combination of the original injury and the ministrations of the witch doctor that produced the end result. It is unlikely that anyone would contend that such a result should be compensable.

These rather extreme, but perfectly accurate and pertinent, examples demonstrate that a line must be drawn somewhere short of that drawn by the California court. On the other hand, most courts, in the search for a simple formula, have gone too far in the other direction when they have announced a general rule that the chain of causation between the original injury and the later consequences is broken by the claimant's negligence. Suppose a claimant, having hurt his hand at his machine, is sent to the company doctor's office located on the premises and falls down in the course of the journey because of his negligence in not looking where he is going. The results of the fall would undoubtedly be held compensable in any jurisdiction. Now suppose that the claimant, who stays home the following day, is ordered to visit a doctor in town, and in the course of that journey falls down because of his negligence in not looking where he is going. It seems difficult to conclude that this fall should be less compensable than the other. A strong
causal connection runs from the original injury through the second injury, and the compulsory trip to the doctor’s office seems virtually as much a part of the employment in the second case as in the first.

The reason why a single unified formula will not fit all cases is that the underlying compensation test of work connection is itself not a single test based on causation. Work connection is a meld of two elements: arising out of employment, and arising in the course of employment. The two elements of the test do not operate independently, whatever courts may say, but interact and produce a kind of composite work-connection test in which the two elements are merged. Thus, a strong “arising out of” element will make up for a weak “course” element, as when a person on his way to work before working hours and off the premises is injured by a source of harm emanating from the employment premises. Similarly, a strong “course” element will make up for a weak “arising out of” element as in the positional risk cases.

This being true as to the initial compensable injury, it is not surprising that the question whether the claimant’s subsequent conduct is an independent intervening cause in these cases cannot fairly be determined by reference to conventional causation principles alone; it too must be determined by a test that is a combination of “course” and “arising out of” elements. Since, in this strict sense, none of the consequential injuries we are concerned with are in the course of employment, it becomes necessary to contrive a new concept, which we may call for convenience “quasi-course of employment.” By this expression is meant activities undertaken by the employee following upon his injury which, although they take place outside the time and space limits of the employment, and would not be considered employment activities for usual purposes, are nevertheless related to the employment in the sense that they are necessary and reasonable activities that would not have been undertaken but for the compensable injury. “Reasonable” at this point relates not to the method used, but to the category of activity itself. Using this test, we can now make a start on distinguishing some of the illustrations listed earlier. “Quasi-course” activities in this sense would

13. Freire v. Matson Nav. Co., 19 Cal. 2d 8, 118 P.2d 809 (1941). Claimant, while still on a public thoroughfare adjoining his employer’s piers, was injured due to a traffic congestion caused by vehicles that came there on the business of claimant’s employer. The injury was held to be in the course of employment on the theory that the zone of employment danger had been extended beyond the gate by the employment-created dangers in the street.

include, for example, making a trip to the doctor’s office and reaching for aspirin in the medicine cabinet. The concept of “quasi-course” would not, however, include beating one’s wife or engaging in a boxing match.

Once we recognize that we are dealing with a dual rather than a single problem, we are ready to go on to the next task, which is to identify an appropriate rule on range of consequences separately for each of the two categories of subsequent activity.

It is submitted that an appropriate pair of principles would be as follows: When the injury following the initial compensable injury arises out of a “quasi-course” activity such as a trip to the doctor’s office, the chain of causation should not be deemed broken by mere negligence in the performance of that activity, but only by intentional conduct which may be regarded as expressly or impliedly prohibited by the employer. When, however, the injury following the initial compensable injury does not arise out of “quasi-course” activity, as when a claimant with an injured hand engages in a boxing match, the chain of causation may be deemed broken by either intentional or negligent claimant misconduct.

Let us now try out these tests on the more familiar examples falling within both categories. Suppose, for example, the category of activity is that of subsequent treatment of the compensable injury—clearly a “quasi-course” activity. If the employee’s fault is simple negligence, as in carelessly taking bichloride of mercury tablets by mistake for aspirin although the bottle was plainly marked “poison,” under this test the subsequent injury would be compensable. This seems to be the right result. To deny compensation in these circumstances, which the court in fact did, seems unduly harsh, in view of both the straight-line sequence between the initial injury and the act of reaching for the aspirin, and the comparative mildness of the claimant’s fault in inadvertently picking the wrong bottle out of the medicine cabinet. But now take an example from the other extreme in the category of subsequent-treatment activities, the hypothetical case of the claimant who goes to a witch doctor. Here is no mere negligence. Here is a deliberate act which probably was in violation of express medical orders, and undoubtedly in violation of an implied prohibition.

One advantage of the test of implied prohibition is that it can be reduced to two reasonably measurable requirements: The first is that

the employer would have forbidden the act if he had had an opportunity to express himself on the subject; the second is that the employee knew or should have known of this fact. This set of distinctions might produce different results among some of the cases in which patients, with their injured hands wrapped in alcohol-soaked bandages, have set fire to the bandages by attempting to smoke. In a California case, the claimant punctured his hand with a nail while at work. The foreman applied a bandage soaked in turpentine to keep down the pain, and claimant went on working. Claimant then lit a cigarette, setting fire to the bandage and causing serious burns. Compensation was awarded. There are, however, at least two leading cases denying compensation for this kind of accident. In one, the claimant lit up a cigarette just as he was leaving the doctor's office with a bandage on his hand freshly soaked in alcohol. In the other, the claimant, while still in the hospital with his bandages saturated with alcohol, was specifically warned not to smoke, but did smoke anyway.

This type of issue, under the present formulation, should turn on facts that are not apparent from, or at least not emphasized in, the opinions in these cases. Suppose the claimant has been repeatedly and expressly told he must not smoke; suppose he has been given the closest possible supervision in the hospital to see that this rule is obeyed and that the matches have carefully been kept from him; and suppose that he consciously and deliberately goes out of his way to obtain matches and violate the prohibition. A denial of compensation for the consequences would be logical under the rule here suggested. But suppose the claimant has been informed of the dangers of smoking in only the most routine way, or perhaps has not been informed at all, and suppose that, since he has automatically lit a cigarette every few minutes during his waking hours for the last 20 years, he thoughtlessly lights a cigarette and ignites his bandages. This could be called negligence, at most; and since the entire hospital or treatment episode, including smoking, is in the "quasi-course" category, compensation could properly be awarded, there being no intentional violation of a prohibition.

A familiar type of case that belongs in the "quasi-course" category is that of the employee who suffers additional injuries because of an accident in the course of a journey to a doctor's office occasioned by a

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compensable injury. The employer is under a statutory duty to furnish medical care, and the employee is similarly under a duty to submit to reasonable medical treatment under the act. The provisions of the act, in turn, become by implication part of the employment contract. This being so, it follows that accidental injuries during a trip made pursuant to this statutory and contractual obligation are work connected. Of course, if the prior injury in any way contributes to the second accident, the case is that much stronger, as when pain or drugs or a weakened member may have played a part.

In the "quasi-course" category belong also those cases in which the employee himself aggravates the compensable injury by his conduct in connection with the process of treatment or healing. If the employee's fault consists in nothing more grave than simple negligence in attempting to apply home remedies, as a result of which the injury is aggravated, compensation under the present view should be awarded. Accordingly, it has already been argued that Brown v. New York State Training School for Girls, the case of the workman who mistakenly took bichloride of mercury instead of aspirin, was wrongly decided. A later New York case seems to have adopted a sounder view. In Tierney v. Independent Warehouse Co., the claimant had applied home remedies for six weeks and gangrene had developed. Compensation was awarded for the amputation of part of the claimant's foot on the basis that, even had proper medical attention been provided at an earlier date, the gangrenous condition might still have occurred. This result is in line with the type of decision in which, while on the job, the employee negligently converts a noncompensable indisposition into a compensable injury by his attempts at treatment. For example, in Elliott v. Industrial Accident Commission, an employee thought he was taking a little wine for his stomach's sake, and instead drank insect spray which

22. 285 N.Y. 37, 32 N.E.2d 783 (1941); see text accompanying note 14 supra.
24. 21 Cal. 2d 281, 131 P.2d 521 (1942).
was kept in a wine bottle. His death was held to have arisen out of the employment.

In the ascending scale of gravity of the employee's intervening misconduct in the treatment process, we finally come to the intentional act of choosing to be treated by a charlatan rather than by a recognized doctor of medicine. The cases presenting this question have held that this treatment severs the causal chain. This is the correct result, since such conduct goes beyond mere negligence and amounts to the deliberate undertaking of a line of conduct which the employee must have known was prohibited.

Closely related to the problem of claimant misconduct in aggravating an injury by treatment is the problem of aggravating an injury, or preventing its alleviation, by refusal of reasonable treatment, healing, exercise, examination, or surgery. Here again we have a "quasi-course-of-employment" situation, in that the relevant events cluster around the handling of a compensable injury. The degree of claimant misconduct required to break the chain of causation should therefore be not mere negligence, but intentional conduct which is clearly unreasonable.

The question whether refusal of treatment should be a bar to compensation turns on a determination whether the refusal is reasonable. Reasonableness in turn resolves itself into a weighing of the probability of the treatment's successfully reducing the disability by a significant amount, against the risk of treatment to the claimant. The application of these tests has generated a large number of cases that need not be examined here, since the legal principle is reasonably clear.

When we come to the cases that are not in the "quasi-course" category, and where the chain of causation can therefore be broken not only by intentional misconduct but by negligence, the legal question is almost always what constitutes negligence. Most cases will not be as conveniently extreme as those of the witch doctor and the boxing match.

Usually the distinction that has to be drawn is between true negligence and momentary carelessness. An impulsive and momentarily thoughtless human act is not enough to satisfy the grave concept of negligence, and when it combines in some way with the consequences of the preexisting compensable injury to produce further injury, the final result is generally held compensable. The Kelley case, awarding

26. For a complete treatment of this subject, see 1 Larson § 13.22.
compensation to a man with a cast on his leg who fell down the church steps while trying to save a child from falling, has already been mentioned. Another New Jersey case is similar in principle.\textsuperscript{28} Claimant, because of a compensable eye injury, was required to wear dark glasses. At 11:00 at night, in his own home, he fell down the stairs because the glasses obscured his vision. The aggravation of his eye condition resulting from the fall was held compensable.

Other cases have awarded compensation for a fractured hip sustained in a fall attributable to a compensably injured ankle,\textsuperscript{29} knee,\textsuperscript{30} or leg,\textsuperscript{31} for a fall down the stairs occurred because the claimant could not grasp the bannister due to bandages on his hands as a result of a compensable injury,\textsuperscript{32} and for injuries due to the slipping of crutches which were necessitated by a compensable injury.\textsuperscript{33} In these and many similar cases,\textsuperscript{34} the second injury appears to have been purely accidental, and no substantial question of independent intervening cause based on the claimant's conduct has figured in the decision.

Where the question of intervening cause has arisen in the category of cases outside the "quasi-course of employment" it has usually been held that the claimant's negligent act broke the chain of causation. A rather close case is that of the man who knew that his compensably injured knee was apt to give way without warning, because it had done so on a number of occasions, but who nevertheless undertook to carry an armload of trash down the cellar stairs. His knee collapsed and he fell the length of the stairs, striking his head on a drain and breaking his jaw. Compensation for these injuries was denied.\textsuperscript{35} As in this case, negligence has often been found where the claimant rashly undertook a line of action with knowledge of the risk created by the weakened member, as in the cases involving driving a car,\textsuperscript{36} or tractor,\textsuperscript{37} or jump-

\textsuperscript{28} Randolph v. E.I. Du Pont de Nemours & Co., 130 N.J.L. 353, 33 A.2d 301 (Sup. Ct. 1943).
\textsuperscript{29} Unger & Mahon, Inc. v. Lidston, 177 Md. 265, 9 A.2d 604 (1939).
\textsuperscript{31} Continental Cas. Co. v. Industrial Comm'n, 75 Utah 220, 284 P. 313 (1930).
\textsuperscript{34} See 1 LARSON § 13.12.
\textsuperscript{37} Jones v. Huey, 210 Tenn. 162, 357 S.W.2d 47 (1962).
ing off a truck. But merely to attempt to carry on the duties of a nurse with a weakened back, or of a supervisor while on crutches, is not negligence. Even getting drunk, if it represents nothing more than carelessness, has been held not to break the chain of causation.

One of the more debatable decisions in this category is the New Jersey holding in *McAllister v. Board of Education,* where the employee suffered an industrial heart attack. His heart condition did not improve, but became progressively worse. Five years later he received a phone call at 1:00 a.m. from a friend who told him that his wife was drinking at a tavern with another man. The employee rushed down to the tavern and became embroiled in a domestic triangle argument. The emotional experience triggered a fatal collapse, and he died at the tavern within the hour. The court affirmed the finding that death was causally related to the industrial heart attack, since the domestic episode "was merely the trigger that killed him." Quite apart from the irony of an award to the wayward wife whose conduct led to the fatal encounter, the case raises the question whether the deceased's actions, in deliberate disregard for the effects on his compensable injury, are not more comparable to the cases in which compensation has been denied for the results of intentional reckless conduct than to those in which there has been a fleeting act of thoughtlessness.

This class of cases may also present the question, not merely of what is negligence, but of what is a "quasi-course" activity. The California case of the carpenter who cut off his finger with a power saw at home, with which this article began, provides a good illustration. As noted earlier, compensation was awarded on the inaccurate theory that the intervening negligence of the claimant was always immaterial and that the intervening cause always had to be the sole cause of the subsequent harm. On the facts, however, the activity could be brought within the "quasi-course of employment" concept. To hold negligence irrelevant would then be consistent with the pattern here favored. The injured carpenter had been ordered by his doctor to exercise his eye,

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44. See text accompanying notes 1 & 11 *supra.*
and to attempt to rehabilitate himself. Rehabilitating himself as a carpenter could reasonably include attempting to resume the use of the tools of his trade.

In conclusion, then, it may be said that most of the decisions dealing with the range-of-consequences problem, with a few notable exceptions, are consistent with the principles and distinctions here proposed as guidelines in this area. It is hoped that the formulations here attempted will provide a useful foundation of legal principle on which results can be produced in this category of cases that are realistic and consistent with the central purpose of workmen's compensation.