Presumption of Survivorship
by
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Resumption of Survivorship.

Statement of the Question: "When two or more individuals have died within a very short period of each other, and no witnesses have been present to notice the exact instant of dissolution, to determine who lived longest.

Presumption of Survivorship like every other presumption involves a reasoning process. A definite result—who survived—is wished to be arrived at from certain data; and these data may range over the whole field of evidence, from the one extreme resulting in unqualified certainty, to the other extreme resulting in complete uncertainty. For example, the bodies of two men are found
in the ruins of a building which had overwhelmed them. The one is found quite smashed under a huge block of stone so that death must have been instantaneous. The other is found in an area where he had freedom to move, though hopelessly imprisoned by the surrounding and superincumbent extent ruins, but free from the least trace of bruise, and his body, somewhat emaciated, presenting the appearance of only recent dissolution. The proof in favour of the survivorship of the latter is here quite conclusive. Again, two sailors, concerning whose peculiarities of constitution and mode of life nothing definite is known, apparently of the same age and in ordinary good health, set sail in a vessel which is never again heard of. Supposing the ship to have gone down and all on board to have perished, to determine the survivor of the two sailors in question is evidently an impossibility. Between the two extremes adduced we may have evidence of every degree of completeness, and the probability of our conclusion
being correct will vary with the amount and quality of the data: while in every case it must be observed, the conclusion itself is, in point of fact either right or wrong. When the evidence is complete or nearly equally balanced for the parties there is, indeed, no presumption at all. It is only when the proof is defective or nearly equally balanced for the parties that a presumption can be in favour of the one or the other. It is, indeed, an essential element of the question. That facts are wanting to establish an undoubted conclusion, and it becomes the grand duty of the medical jurist to fill up the gaps which the lack of those facts has created. He cannot find a substitute as substantial as the original, but it is evidently incumbent on him to supply the deficiency in the best manner possible. He draws from analogy and experience. When a link is wanted to complete any part of the chain of evidence, he examines minutely what goes before and what comes after—what would
likely succeed the former, what would likely precede the latter. He compares the facts at his disposal with what has happened in similar cases in his own experience and in the experience of others. He despises in short, no information tending to throw light on the mystery if it be authenticated. By this means he forms an opinion as to what was most likely the fact in each case where that was wanting; and completing the chain of proof in this manner arrives at the conclusion which he considers the most probable.

It thus appears that the issue depends on two kinds of evidence which it is very important to distinguish. There is first the ascertained facts of the case; and second there is supplementary evidence derived from analogy, experience, and a variety of other sources required to complete the chain. The first, being facts, are incontestable; while the latter at best are only highly
probable. The superiority of the former over the latter, as evidence, requires no showing. The whole may be compared to a chain as above indicated. The medical jurisist searches for as many as possible of the original links, because the fewer ‘vents’ he has to make, the stronger will be his chain. This seems to be the rationale of the whole process, and the proper function of the medical man in this department of jurisprudence.

From the foregoing discussion into which we have been led there is suggested, that the importance of collecting all the facts relating to the case cannot be overestimated. The ages, temporary peculiarities of constitution and mode of life, should if possible be ascertained. The manner of death, positions of bodies, bruises etc. etc. all should be accurately noted. Everything should be done in short to diminish the necessity for the opinions of medical men, whose differences in this respect have
become proverbial—a reproach, which we fear an examination of the trial, in any age or country will show not to be unmerited.

It is usual to consider this subject as divided into two parts. I When Mother and new-born infant are found dead. II All other cases.

Although there is no logical distinction between these two, it is nevertheless convenient to make this division, as the circumstances connected with the former are of a kind sui generis, and seem entitled to a separate consideration inasmuch as Midwifery itself has ever been looked upon as a distinct branch of Medical Science.

II When Mother and Child both die shortly after delivery. It must be presumed that no person was present during delivery. A case, indeed, may be imagined in which a partial or complete delivery may have taken place;
and then, when the only party present had gone for assistance death had supervened. This, however, seems so unlikely from various causes that we shall be satisfied with simply mentioning the importance of the testimony of the third party referred to.

The helpless state of the mother must have been the result of accident, or a preconceived arrangement on her part. In the latter case her conduct is an offence against the law, and not unlikely intended to be followed by the more unnatural crime of infanticide. It seems of some importance to mention this contingency as there is a bare possibility of violent marks being found on the child, which would go a great way to substantiate the survivorship of the mother.

From these unusual cases we now come to the main question. In the first instance two things must be noticed: 1. That the child be really born. 2. That it was
born alive. Unless both these be substantiated there will be no question of survivorship. The head may be all of the child that is extruded, and in this state it may have breathed and even cried; yet in point of law it is not considered born and therefore cannot enjoy civil rights. If it be born it must next be established that it was born alive. The evidence for this fact would of course be irrelevant here, although the question as to the length of time it lived is highly pertinent and will be considered in the sequel.

The history of the mother, and the history of the child from the date of birth to the date of finding is in the case of each divided into two parts by their deaths. If by an examination of the body of the mother we can arrive at the probable time which had elapsed between her delivery and death, also, from intuition and other signs the probable time which has
elapsed since her death: and again if by a corresponding examination of the body of the child we arrive at corresponding results with respect to it, it is evident we have here one way, at all events, of determining the probable survivor. This plan, we observe, is quite independent of the connection between the two as mother and child. The mother may have been any mother, and the child any child. The essential fact simply being, that the delivery of the mother found, and the birth of the child found must have taken place at the same instant. Such a mode is evidently applicable only in those cases where the period elapsed between the birth and death is within that in which anything like an approximation can be relied upon. Thus if the mother life lived more than 3 or 4 weeks, the signs of delivery in the dead will not be visible. Or again: Taylor, referring to the child, remarks “the signs of survivorship for short periods after birth are not very dis-
There is commonly no difficulty in determining the fact after the second day. Consequently, if the child died before the second day we cannot decide how long it survived birth. Both in mother and child the value of the post-mortem examination will be much depreciated if the bodies are anywhere advanced in infraction.

On these accounts it will be necessary that when found both mother and child should be made the subject of independent examination: the mother without reference to the child—the child without reference to the mother. In fact to ascertain the probable immediate cause of death in each, and how long each survived has been dead. An investigation ought next to be instituted with special reference to each other—concerning peculiarities in the one likely to exercise a fatal influence on the other. The circumstances connected with the child unfavourable to the mother are—a large head, or body, or
tumour. These, however, it must be observed are equally hazardous to the infant itself. Those connected with the mother unfavourable to the child are, a small or deformed pelvis, some diseases, and general debility.

We shall now briefly advert to the examination of the child. To determine the probable time it had lived the following parts are to be examined: the foramen ovale, the ductus arteriosus, the ductus venosus, and the umbilical cord. We shall not enter into all the peculiarities of these. Any one or two of them would afford but little reliable evidence, as there are exceptional cases in all. It is only when the facts of each converge to the same conclusion that the verdict is satisfactory. Material data may frequently be afforded from investigating the probable cause of death. If this was violent from intention or accident there will likely be signs of such violence. There may be suffocation, cold and starvation, bruises
and injuries of every description—hernia of the phlegm. The cause of death was possibly natural such as tumours, anæmification or disease of important organs, especially those of respiration and circulation. Or, the general delirious appearance of the child may be presumptive proof of its non-viability. One or more of these phenomena sufficient of themselves to cause death will constitute important facts in the determination of the question.

The examination of the body of the mother will not afford much proof as to how long she survived delivery if that was 3 or more than 8, or 14 weeks at most. But it will be seldom necessary to settle a case of survivorship after so long a period, & therefore the evidence from this source will generally be material. The principal points to be attended to are:

The uterus, and if the delivery is very recent, the relaxed state of the more external parts. It must be remembered however, that the uterus often contracts in
regularly; and if the birth is premature the uncertainty is greater. Full account should be taken of any marks of violence on the person, especially if these be sufficient to cause death. Inquiries concerning the female previous to her delivery are important. If she has been suffering from wasting disease, if previous labours were protracted and dangerous, if the present one had been hastened by unnatural causes—these and such like, would presuppose a likelihood of her succumbing more readily.

In examining the bodies to ascertain how long they have been dead the stage of putrefaction is most important—then the colour and consistency of some of the internal organs. The examiner ought to remember the acknowledged fact that the bodies of infants decompose more rapidly than those of adults.

There will generally be facts peculiar to each case of very material service. The female may have been seen but lately
in ordinary health; thus limiting the time to but a short while after delivery. Generally speaking, this will be the most frequent state of matters, as well as the most difficult to decide. When both survive delivery some days, comparatively a much more confident result may be arrived at, but when a mother has been delivered during the night and both found dead in the morning, and in cases such as this, the examination of the body will afford but little clue to the survivor. The question must be settled almost solely on deductions from incidental circumstances. The incidental circumstances might be such as the following: The position of mother and child— the latter might be so situated as to warrant the opinion that suffocation was the cause of death. Or if the birth took place in an exposed position, to notice whether the mother had had sufficient strength to put it in a protected place, or whether it lay all uncared for as it was born. This will
be sufficient to illustrate the nature of the evidence in question, and its importance in such cases.

Having thus gone over the various points to be attended to, we shall conclude this first division of the subject by comparing their chances of survivorship.

It is admitted by all that, generally speaking, the survivorship is in favour of the mother. The reasons which seem to warrant this conclusion we shall now shortly review; arranging them with special reference to the most frequent causes of death.

Undoubtedly the most frequent precursor of death in childbirth is a protracted delivery. When we say precursor we do so advisedly; because in itself it may not be so much the cause as the exponent of the cause of death, in almost all cases of difficult parturition. The real cause might be either debilitated nervous energy in the female, rendering the expulsive force inefficient; an abnormal
without reference in the first instance to the cause of the tediousness
position of the foetus; a small or deformed pelvis, or a large head in the child—all of which generally present us with the inward concomitant of tedious delivery. On which then will a tedious delivery have the most fatal tendency—mother or child? There is no doubt but the regular pains of labour, when prolonged beyond the natural period, have a very weakening influence on the mother, although such cases are very rare in which she succumbs from this cause alone before the delivery is consummated. If all the vital functions are in healthy operation, experience proves that it takes a very considerable amount of simply prolonged suffering to act fatally—especially in an adult. It is different with such a tender piece of mechanism as a foetus. Dependent as it is upon the mother until it can breathe for itself, it is easy to conceive how, in a tedious passage from the uterus to a final separation from its parent, the incipient functions of indepen
dent existence may be so interfered with as to limit their operation to a very short time. Concerning a table of tedious cases by Dr. Fleetwood Churchill that authority says "I have excluded all presentations but the head, all operative cases, all cases which were prolonged in the second stage . . . . The entire number amounts to 143. Of these not one of the mothers died although in some cases the first stage was enormously prolonged, and but 10 of the children, one of which was stillborn. The cases here are evidently the most benignant examples of tedious delivery, and prove that even here, on the very threshold of danger the presumption of survivorship is greatly in favour of the mother; inasmuch as, of 143, the protracted delivery was fatal to nine of the children, but to none of the mothers.

When we come to cases in which the tediousness is caused by circumstances in themselves hurtful, the results will be still more unfavourable to the infant.
In a small or deformed pelvis, or a large head in the child, both parties suffer; and it becomes a question, which suffers most? We must suppose, of course, that the expulsive energy of the mother has at last overcome the resistance, and the child been born alive, however shortly it may have survived. That it was born at all is presumptive evidence of the vital powers of the mother having been considerable; while it is not to be supposed that a tender foetus, subjected to an equal amount of pressure, wanting that attention on delivery its unusually debilitated condition requires, would brave the common danger longer than its more robust parent.

The complication of abnormal presentation evidently affects the child equally with, if not more than the mother. We cannot enter here into the comparative effect of the various malpositions of the foetus on the mother and the child. As strong proof against the latter, however, we have simply to examine records of cases. We al-
ways find that there is a very much larger proportion of deaths amongst the children than amongst the mothers. Of course many of the former would have been still-born, and some of these from causes unconnected with the circumstances accompanying birth; but even deducting the usual proportion of such, there are sufficient left to establish the fact contended for.

In premature labour there are two circumstances important to mention. If the child is born viable, it is nevertheless much weaker every way, and therefore more liable to die in unfavourable circumstances, this being always presupposed in cases where both are found dead. The other point is, that the foetus is less than usual, and the physical difficulties of parturition are therefore more easily overcome. Both these are favourable to the mother in a question of survivorship.

We shall now speak of cases in which the presumption is not so decidedly in favour
of the mother, or where it may rather be in favour of the child. If the mother shortly before delivery sustained an injury which in no way directly affected the foetus, the labour that was unfortunately at hand, and induced likely by the accident, might in the circumstances have a fatal effect on the mother while the child escaped. Often, however, blows or falls bruise not the mother only but directly injure the foetus, and in such instances we must give a preference to the former. An examination of the injured part will be a guide in deciding. The only cases considered as generally favourable to the survivorship of the child are the two following. When the mother is delivered of twins, she may bring forth the first and die before the second is born; and when she is labouring under an acute disease. The first requires no comment. In regard to the second, the same remark are applicable as we made concerning the
case when the mother was injured and the child not. The shock of labour may be too much for the parent under the circumstances while the infant is unaffected. A long wasting disease however cannot come under this head, as in such a case we must consider the foetus as partaker in the bad effects. If death has been the result of cold, or want of bodily comfort, it seems plain common sense to presume that the tender infant, warm from its mother's womb could ill maintain an independent existence under so severe circumstances, it must therefore have yielded first to the common enemy.

In all cases of dangerous parturition there is this to be observed, that while each have perils peculiar to themselves, the child, in addition, is more or less affected by the extremities of the mother from the intimate and dependent relation it bears to her. These considerations seem fully
to warrant the conclusion that with
the two exceptions above mentioned, the
presumption of survivorship as a general
rule must be given to the mother.

II. The next division of the subject
we have called by the rather indefinite
title of "All other cases." These may pre-
sent themselves, indeed, in endless variety,
and a strict classification of them is
next to impossible. There appears to us
nevertheless, a certain class of cases dis-
tinct from the others, inasmuch as, a
solution of them depends upon arbitra-
ry laws, and not upon particular evi-
dence. We mean those cases where no
thing is known respecting the parties ex-
cept the very elementary facts of age
and sea; and where the circumstances
connected with, and perhaps even the
kind of death are entirely unknown.
Such as persons on board a ship which
is never heard of. It would probably
be more consistent with common sense
Note * The following is copied from Beek (p. 361-5th ed.)

"The present French law on this subject is contained in the following sections of the civil or Napoleon code":

1. "If several persons, naturally heirs of each other, perish by the same event, without the possibility of knowing which died first, the presumption as to survivorship shall lie determined by the circumstances of the case, and in default thereof, by strength of age and sex.

2. "If those who perished together, were under fifteen years, the oldest shall be presumed the survivor.

3. "If they were all above sixty years, the youngest shall be presumed the survivor.

4. "If some were under fifteen, and others above sixty, the former shall be presumed the survivor.

5. "If those who have perished together, had completed the age of fifteen, and were under sixty, the male shall be presumed the survivor, where ages are equal, or the difference does not exceed one year.

6. "If they were of the same sex that pre-
to compromise suits resulting under such circumstances, but in those where a decision is necessary it is evident we must have recourse to arbitrary laws—nay arbitrary either, for they must be framed according to the most general experience of competent judges. The succinct sections of the "Code Napoleon" (see note*) on this subject are framed to meet such cases and on such principles; and where this mode must be had recourse to they are generally received as the most equitable basis of settlement. The presumption is founded on age and sex. The general principle which pervades these laws is, that in accidents terminating fatally the last survivor will be the person possessing most bodily strength and vigour. Guided by this dogma the extremes of age are most favourable to survivorship while the prime of life is the opposite. The two following sections furnish the key to this theory:

"If those who perished together were
sumpton shall be admitted which opens the succession in the order of nature—of course the younger shall be considered to have survived the elder.
we under 15 years, the oldest shall he presumed the survivor."
"If they were all above 60 years, the youngest shall he presumed the survivor."

The relative strength of the human race at different ages may thus be compared to a central piece terminating in a cone at each end. The central piece is of course thicker than either of the cones at their greatest diameter; but whether it will be best represented by a cylinder, an ellipsoid, or some other figure we shall not at present inquire. The Code Napoleon makes it really a truncated cone (although we shall show presently this is purely an arbitrary); while the latest abstract truth implied in the Code requires it to be a cylinder.

One imperfection has been pointed out in these laws of some importance. One section reads: "If some were under 15 and others above 60 the former & shall be presumed the survivor." For a year or two before the age of 15 this is in all like...
likelihood just; but it has been objected, that an infant cannot be supposed to survive a person only a few years above 60. Black makes the following criticism on the code: "No provision is made for the case when persons under 15 or over 60 perish together, although this may possibly be met by the last section." This stricture seems to us unnecessary and unjust. Unnecessary, because the contingency is provided for by a legitimate corollary from the 2nd and 3rd sections; and unjust, inasmuch as the remedy he suggests is inconsistent with that corollary. The 2nd section says: "If those who perished together were under 15 years, the oldest shall be presumed the survivor." That is, strength increases with age before the prime of life. And the 3rd section says: "If they were all above 60 years, the youngest shall be presumed the survivor." That is, strength decreases with age after the prime of life. But the period of life when strength is at a climax, or the
prime of life is various; and there may be a number of years before and a number after prime when the presumption of survivorship is in favour of all equally, therefore, say the framers of the code we shall lay down the law effecting such upon no physiological principles, but by an arbitrary dictum, viz: "That presumption shall be admitted which opens the succession in the order of nature—of course the younger shall be considered to have survived the elder." But is it not understood that this middle period of life is the period of greatest strength and that strength diminishes both as we go backwards to birth and forwards to old age from this central piece? It is not only common sense but seems a natural and just deduction from the 2d and 3d sections of the Code Napoleon. This deduction or corollary we humbly propose to read as follows:

"When a number of persons perish together, those between 15 and 60 years of age..."
shall be presumed to survive both those under 15 and those above 60 years."

Now what does Beck say? This: "No provision is made for the case when persons under 15 and under 60 perish together although this may possibly be met by the last section. We shall quote this last section again: "That presumption shall be admitted which opens the succession in the order of nature—of course the younger shall be considered to have survived the elder. Consequently, if this suggestion of Beck means anything, it is simply this, that if they are all under 60 the youngest shall be presumed the survivor. Or, take an example, an infant of a few days must be presumed to survive a person of 40 years of age. We respectfully think Beck has misunderstood this much of the Code Napoleon."

The Code Napoleon, with the exception of the section referring to the case where some are under 15 and others above 60, appears equitable. The extremes of age are certainly less favourable than the inter-
mediate period; but when "some are under 15 and others above 60" the difficulty is indeed not easily got over. As to the first between 15 and 60, the Code Napol. deals with it in what appears to us, quite an arbitrary manner. When they fix the succession in the order of nature, they seem to have been guided by no physiological principle, and might for that part have inverted the rule making the oldest the survivor. Physiology, indeed, declares for neither, and this is the reason why they must be considered as bas having looked upon the presumption as being in favour of all equally, but requiring to lay down a law they used sovereign power and opened the succession in the order of nature. This accounts for our saying above: "The Code Napoleon makes it "the central segment of human life) "really a truncated cone, (al though we shall show presently this is purely arbitrary); while the latent abstract truth implied in the Code requires it to be a cylinder."
It is not so easy getting over the 2nd difficulty viz. with the extremes of age. The Code Napoléon is nearly as arbitrary here as in the former case, but unfortunately the laws are partly opposed by physiology. It may be natural to suppose that persons from 10 to 15 will hold out longer than those above 60; but it is not so natural to suppose that persons under 10 will; and when they are under 3 or 2 it will be natural to suppose the contrary, unless where we have extreme old age. It is evident there is here great complication. And while we in common with others find fault with the Code Napoléon at the same time think that in equally short space nothing could be written to supersede it. We shall close this question of age by the following diagram, illustrating so far the Code Napoléon; and presenting the rude idea of a plan by which the question of survivorships, depending on age alone, may be solved. There is here represented the longitudinal section of a central cyl.
under terminating in cones at either end.

AB the axis represents the length of a person's life in years. A is Birth, where life begins; 13 is old age where it ends. The divisions are those of the code Napoleon. AC is 13 years; CD between 15 & 60; and DB from 60 to 75. The presumption of survivorship for any particular age will be found by measuring the vertical line intersecting the axis at the age in question; i.e. if different persons perish together, he at whose age the longest vertical line can be drawn will be the survivor. It might be a question whether or not the vertical lines drawn between the dotted lines in red would be a better representative of the relative chances of survivorship between the ages of 15 & 60.

This idea may be fanciful, but we think it is not without a foundation in correct physiology.

Sex is the next basis of the sections.
in the Code Napoleon. This requires no comment.

There are many instances in which there is

ground for believing that as far as survivor-

ship is concerned the female has the advan-
tage. But there are cases in which we know

somewhat of the particulars concerning the
deaths, and will be considered immediately.

In all those in which we are almost entire-
ly ignorant of the facts of the case, and

where a decision must be given rest on law

there seems to be good reason for making the
law easteris partieus in favour of the male.

This is what the Code Napoleon does, and

apparently with the approbation of all. The

clause says:—The male shall be presumed

the survivor where ages are equal, or the dif-

ference does not exceed one year.

In general we know some circumstances

connected with the deaths of the parties, as well

as peculiarities of constitution and mode of life

affecting survivorship. It is here we have that

variety of cases which almost defies our treat-

ing of them otherwise than individually. This

would be far from an unprofitable labour, but
as research for them entails a greater command of books and time than is at our disposal, and even when found little beyond a mere transcription could be attempted, we prefer abiding by general principles which more or less guide the Medical Jurist in arriving at a decision.

We have before called attention to the importance of collecting all the facts tending to throw light on the difficulty. These facts are not of equal importance however, and we shall now advert to them with preference to their relative value. The facts may be of two kinds: the one kind forming the basis of a solution on physiological (or physical) principles, and general in their application; the other leading to a decision through its theory, and altogether the exclusive property of particular cases. Of the former kind we may mention Age, Sex; Kind of death, as Drowning, Starvation, Hunger &c; disease, which in the circumstances might be the means of hastening death, as Apoplexy, Asthma, Larynx &c; and any other
peculiarity affecting survivorship. These and such like are by some wrought up into theories founded on experiment and accurate observation, and when nothing further is known respecting the parties may be accepted as furnishing the best means for answering the question, where an answer is necessary. But, in our opinion, these theories carry with them no moral conviction even probability, and must be regarded simply as an extension of the sections in the Code Napoleon, which are more for the purpose of settling disputes, on grounds most consistent with physiology, than fixing definitely who the survivor was. We shall give reasons for thinking so afterwards. Facts of the second kind are of much more service in arriving at a satisfactory decision. They are, we mentioned, the exclusive property of the case under investigation, and we may here make a general observation, that the more exclusively applicable the evidence is to the case, the greater will be its value. Of this
kind of fact, we may mention the following: injuries that must have been almost immediately fatal; an advanced state of putrefaction in one, and a less advanced state in another; in escaping from danger one found more removed from it than another; in a case of starvation one possessing access to water or any other aliment however insignificant, while another did not, etc. Such facts as these are of the highest importance value, and although they cannot lead to certainty, are those on which depends a decision least removed from it. We may indeed have no moral doubt, although the defect in the chain of evidence implied in such cases can warrant a legal verdict of high probability only.

In entering a little more into detail concerning the various items of the first kind of evidence, and their bearing on survivorship we shall do so more with the view of showing how unsafe they may be than as firing satisfactorily the survivor. In
his article on this subject in "Encyclopedic of Practical Medicine" Dr. Beatty, we think over-estimates this kind of evidence. The conclusions he comes to are not doubt interesting, and the various theories may in the main be correct. But how is it possible to put more than one or two of these theories in practice in the same case? If age or sex was the only thing on which survivorship depended, it would be easy coming to a conclusion when the age or sex was known. But says Dr. Beatty: "We may say then that relatively to temperament in the order of survivorship, the phlegmatic die first, then the melancholic, then the pugnacious, and last of all the belious." Here again, did survivorship rest wholly on temperament when that is known we could easily determine the survivor. But when age, sex, and temperament are all to be considered it is plain that unless they all happen to be in favour of one party there will be a difficulty in adjudging to each their rel-
ative value. If we add to these the probable effects of "some habit and variety of constitution" matters will be still more complicated; and if we have to judge in a case where the manner of death would be affected by age, sex, temperament, some peculiarity of constitution present, disease or moral condition it seems to us that even if the relative value of these con-

comitant  could be expressed in figures to determine the survivor would be a question in probabilities very difficult of solution — much less could a person balance the evidence from all these sources in his own mind and settle the sur-
vivor. Take for example the well known case of General Stanwix's daughter. The items of evidence to be balanced are:

On the one side, a male (the stronger sex); old age (therefore feeble); a life worn out by toil and danger; a man of courage and presence of mind (and therefore could make the most of his chance of prolonging existence); And on the other.
a female (the weaker sex); male constitution vigorous; probably stronger than her father; young, and therefore more unwilling to part with life. Likely, in the cabin where there was more danger. Here, those who lay down rules for judging by physical principles will find some difficulty. "The court wavered giving any decision, and advised a compromise."

We concede, however, that in some instances these theories may apply; such as, when the parties were the same in most particulars, but differed widely in one or two. If, for instance, we have two persons of same sex, age or nearly so, both in good health and of similar temperament, but the one known to possess great courage and presence of mind while the other was notorious for the opposite qualities, and they were both lost in a manner where those qualities would naturally affect survivorship, a claim might not unreasonably be settled in favour of the former. But even here
there is no moral conviction; and innumerable contingencies might have intervened rendering the theory useless.
We shall now consider this kind of evidence, but shortly, as it does not seem of pre-eminent importance.
Age and Sex. We have considered them already in speaking of the code Napoleon.
"The degree of bodily energy must affect the chance of escape when this is possible. Some are incapable of exertion even in the most pressing danger, either from never having accustomed themselves to it, or from obesity.
"This of course refers to such kinds of death only where exertion might prolong life. In a case of starvation it would be of little account.
"The index of bodily energy is what is known by the name of temperament; and in connection with this subject Beatty says "The phlegmatic die first, then the melancholic, then the sanguineous, and last of all the bilious.

Constitution. Some persons may have peculiarities in their constitution which render
them unusually obnoxious to danger under certain circumstances. Small capacity of lung must be considered as unfavourable in instances where death has been caused by interference with the respiratory function. If poison has been the instrument of death, some constitutions are uncertain to be more tolerant than others of certain deadly drugs. This may be natural or acquired, but it is important when known to exist.

The Moral Condition and Passions of the parties often affect survivorship. A weak-minded individual would naturally be supposed to die sooner than a companion possessed of courage and presence of mind in cases where these could be serviceable. On the other hand courage, nobleness, love, and gallantry may and often do incite the physically and mentally brave to put themselves in positions where their generous devotion to a weaker vessel has made themselves the first of victims of death. It is to be observed that ques
tions of survivalship arise only with parties intimately connected with each other, and in them the force of affection is stronger. In shipwrecks, burnings, and similar catastrophes which overwhelm families and friends, we often read how mothers perished in attempting to save their offspring, husbands their wives, &c., and some prompted by sheer humanity in trying to save the lives of absolute strangers lost their own. It is not unusual also to find that parties often belie the character they were accredited with, when overtaken by sudden danger. Persons of weak body & sickly constitution have been known in extreme danger to put forth suddengreater exertion altogether inconsistent with their previous history; while, on the other hand, the strong have become powerless, and the brave have sometimes been observed to display a nervous debility quite unheard of. (See Dr. Burton’s Thesis.) These abnormal states of the nervous system might not last long in either case; but in catastrophes
giving rise to questions of survivorship no appreciable length of time is so short as to be unimportant. Indeed such considerations seem to us altogether to counteract the influence of mental and moral boldness.

Another and very prominent point in theories of survivorship is the Mode of Death. We must advert to a few of the more common.

Drowning. This occurs in shipwrecks, and is therefore one of the most frequent kinds of death in questions of survivorship. The pathology of drowning is a species of that presented by 'Asphyxia from want of Air.' It is a general rule that deaths resulting from external supplies (air, or food) being stopped, that those requiring most of these to keep their system in its normal state of health will succumb most readily when deprived of that supply. Persons in the meridian of life, and those in the possession of perfectly bodily health would therefore according to this theory die first and males
before females. Another circumstance mentioned usually in this connection is the syncope which often supervenes when a person of an excitable, nervous temperament is suddenly overtaken by any calamity. In this state the vital powers are reduced to a minimum, and though deprived for a time of the usual aerial supply retain the capability of resuming their function if the supply is re-established not later than the termination of the syncopeal condition. Several cases are on record in which after a submersion of from 15 to 30 minutes, the parties lived — and from this cause. It is similar to the hibernation of certain animals. As young females are in general more susceptible than others of being thus affected, it must be added to their advantage in judging of survivorships in cases of drowning. It must be remembered however, in giving it its value that the condition is not very common. We have been speaking of drowning, of course, simply by itself. The stronger party might pos
sibly be able to struggle longer with the water than a weaker fellow, or one of the party may have been specifically lighter than his or her companions, or could possibly swim, though only a little. These would certainly go for something in weighing the evidence, but do not interfere with the correctness or incorrectness of the theory criticised.

Suffocation and Starvation are allied in their bearings on survivorship. The remark we made regarding a stoppage of external supplies applies even better here. Parties may at the time from whatever cause can do without less air or less food than their stronger and healthier companions, and could longer support the entire want of these necessities. Young growing persons require a greater supply of food in proportion to their size than older individuals, and are probably on that account as soon frustrated as any. In promiscuous company destroyed by this means we may therefore expect the young and
and robust to be the first victims; and females to survive males.

Extremes of Temperature may be the cause of death to several individuals at the same time. In the one case we may have travellers lost in the desert—in the other in an Arctic sojourn. These states are diametrically opposed to each other, and their effects on age, sex, temperament make the chances of survivorship the inverse of each other. In heated atmosphere the order in which death has been observed to take place is, first the adults, then the young—and the male before the female. In excessive cold the reverse is the case.

We have purposely treated these theories superficially, as it is our firm conviction they are unsafe as a means of determining survivorship. We can hardly conceive a case in which they are not interfered with by incidental circumstances of some kind; and although these circumstances may be
unknown to us they are more the less effective in their operation; and judging without them is much the same as settling the question by arbitrary laws. But if we are to use arbitrary law the Code Napoleon is sufficient and the easiest of application.

The incidental circumstances connected with each case is the other kind of evidence, and by far the most important and satisfactory. We shall now illustrate this by mentioning a few of the circumstances that may be connected with particular cases.

Post-mortem examinations, when practicable, ought to be made. This step may reveal some injury in one which could not fail to have produced death much sooner in one than a corresponding state of matters in another. The stage of intrepation also is instructive; but it must be noticed in connection with this whether or not one body was more exposed to influences hasten
ing decay than others. The post mortem taken into consideration along with the kind of death may furnish some facts. In drowning, the state of the lungs and air passages may possibly afford means of determining which struggled longest with the water. In poisoning the stomach, brain, etc., may tell us which had been most actively affected by the dose.

"The degree of exposure to danger at the time of the accident must necessarily affect the presumption of survivorship. If in a case of Mephitism, one was known to have been at the place where the poisonous gas was escaping, and found dead there; another more distant at the time, and found dead still farther off; while a third had been able to reach a place uncontaminated, but had died nevertheless, the proof that the last was the second survivor is morally conclusive, and the presumption in his favor rests on his hypothesis. In poisoning one may be known to have fastaken
much more largely of the potion than other, and would therefore be supposed to die first.

Means of escape is allied to exposure to danger. In cases where we find the bodies where they had died, the means of escape is superseded by the ascertained fact of their having escaped so far, or not; but in cases where the bodies cannot be found as left by the accident, it will be satisfactory to know that one had the means of getting removed a certain distance from the immediate danger while others had not. As a means of escape we may mention the access which any of a party found dead from starvation had, denied to the others, and this must be taken into account though of the most trifling character. The clothing and protection each possessed in death from cold—the ability to swim in a case of drowning, where this was not rendered immersed.
cas from injury—all these and such like will be of the utmost importance. This will sufficiently illustrate the kind of evidence we have called by incidental circumstances. He might go on enumerating them ad infinitum. Every particular case, indeed, must possess some facts of this kind peculiar to itself; and on these depends, for the most part, a satisfactory decision. We shall conclude by supposing a very natural case—a shipwreck, by which a small promiscuous company was destroyed. Supposing we know all facts relating to age, sex, temperament, disease, peculiarities of constitution &c.; but know nothing of the particular concerning the calamity, our opinion is, that no conclusion can be come to from the known facts, and a decision, if it be necessary to give one, must be determined solely on arbitrary laws (arbitrary at least so far as that particular case is concerned.
ed) say, those of the Code Napoleon. Though many circumstances may be in
favour of one, and against another such as swimming, strength, health, and
disease, want of an arm, weakness, yet we so often find these modified by casual occurrences that no
trust can be placed in them. One of the female's dress may have kept
her afloat a considerable time—be who
wanted an arm may have found
refuge for days on a plank—the
best swimmer may have been hit on
the head by the fall of a log. Indeed
there is no end of such contingencies—
contingencies, too, which are not fanci-
ful merely, but which occur in every
shipwreck. But, say the theorists, since
a decision is necessary we shall decide
according to the knowledge we possess
i.e. from temperament, constitution &c.
So this we say that such a decision will do perfectly well—will just
likely be as near the truth as any
other that can be given under the circumstances, but then it is arrived at after much debating, examining of medical opinions, and weighing of evidence for the one party and the other, while a simple appeal to the Code Napoleon would not be a whit more arbitrary, or less likely to be near the truth—and all the trouble saved.

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