The Causal Link and the Dark Art in Delay Claims

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One main requirement

Delay claims under construction contracts are crucial to contractors since they relieve them from paying delay damages and potentially provide a strong basis for the recovery of loss and expense and in particular the recovery of prolongation costs. Given the complex nature of construction disputes, discharging the burden of proof in delay claims can be problematic, especially that one of the main hurdles is establishing cause and effect or the causal link. In this article, I briefly discuss the causal link requirement, basic causation principles and how these relate to delay analysis in construction claims.

Why cause and effect?

The cause and effect requirement stems from the general principle of reparation under the law of negligence in that where the fault of a person *causes* harm or damage to another, resulting in losses, the person who committed the fault is liable to compensate the person who suffered the loss. The causal link is therefore one of the three elements of a claim in negligence under the law of tort.

For a claim to succeed, the claimant has to establish:

(1) the breach of duty of care on the part of the defendant;
(2) the damage suffered by the claimant; and
(3) that this breach caused the damage.[1]

The same principle, pivoting on the causality element, has permeated through the contract law. From a project delay perspective, the claimant needs to establish the causal link between the claimed event (cause) and the resulting delay or loss (effect) in order to succeed in its delay claim.

Applications of causation

To prove cause and effect, one needs to understand the main principles of causation. This is in fact a very controversial issue which has been addressed in the courts and many jurisdictions extensively, and each case seems to be one of a kind. The

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[1] R. Owen, *Essential Tort Law*, 3rd edn (Oxfordshire: Routledge-Cavendish Publishing Ltd, 2000), p.40.

basic thing to know is that establishing causation can be generally used in two different main contexts:

- The first context is related to a forward-looking application which tests what outcome could be achieved, and when, if certain conditions were met. This mostly relates to prospective or modelled methods of delay analysis for predictive purposes.
- The second context is related to a backward-looking application which investigates what set of circumstances has probably caused a certain result to happen. This backward-looking application is used to determine the extent of a party's responsibility and attribute his causative actions to a certain event or consequence.[2] This mostly relates to retrospective or observational methods of delay analysis.

In terms of legal liability, a distinction is to be drawn between two stages of establishing causation, "factual causation" and "legal causation". Both stages are necessary and neither alone is sufficient. Factual causation is established by proving that the breach or the fault of the defendant has as a matter of fact caused damage or loss to the claimant, whereas legal causation needs to be established before holding a defendant liable for his act that, as a matter of fact, caused harm.

Legal causation

Legal causation cannot therefore be established independently as it is only considered a limiting factor since legal responsibility cannot extend without limit. The chain of causation must be broken at a certain point so as not to hold a person legally responsible where his act is too remote from the consequence. In order to establish legal causation, the preferred test for remoteness is the "reasonable foreseeability" test. If the defendant's act is not reasonably foreseeable to cause the damage, then his act is not considered as the legal cause of the damage.[3] Put simply, the more the resulting damage is predictable, the more likely that the defendant is held legally liable. This article mainly refers to the causal link in the factual causation context and on the presumption that legal causation is proved.

Factual causation

To establish factual causation, the classical test used is the "but for" test.[4] The claimant has to establish that he would not have suffered any damage or loss but for the act of the defendant, i.e. the damage or loss would not have occurred in any event. However, this test proved not to be always accurate as there could be more than one event causing the loss. In such a case, by applying the "but for" test, none of the events could qualify as the cause of the loss. Various tests have subsequently evolved to relax the burden of proof in such circumstances.

[2] Antony Honoré, "Causation in the Law" (*Stanford Encyclopedia of Philosophy*, November 2010), *https://plato.stanford.edu/archives/win2010/entries/causation-law/* [Accessed 2 August 2017].
[3] *(UK) Ltd v Morts Dock and Engineering Co* [1961] A.C. 388.
[4] *Cork v Kirby Maclean Ltd* [1952] 2 All E.R. 402.

Simultaneous causes

Where there is more than one event happening simultaneously and each event alone would have caused the loss, this is known as "concurrent causes", where each event is an independent sufficient cause. In such a case it would only be required by the claimant to establish that the claimed event has materially increased the risk of the loss happening.[5]

It could also be the case where the two events happening simultaneously combined to produce one single result that would not have occurred had each event happened in isolation. This is known as "cumulative causes", where each event is necessary but alone not sufficient. In this case it would be enough for the claimant to prove that the claimed event has made a material contribution to the loss in order to establish causation.[6] Two defendants, each responsible for an event, would be jointly held liable for the claimant's loss.

Consecutive causes

In other cases, the events happen to be successive or sequential (one happening before the other), also called "consecutive causes", and each cause would have resulted in the claimant's loss had it happened alone. This means that the "but for" test would make no event responsible for the loss, or since both events increased the risk of the loss happening, both events are considered responsible. Case law highlights three distinct scenarios.

The first scenario is where the effect of the first event is extinguished (or obliterated) by the second event. This is where the immediate cause of the loss is clearly attributable to the second event and not the first, and therefore the effect of the first event, by way of the second event's existence, could never manifest. In this case the causal link is only established with regards to the second event, which will be the "pre-emptive cause". The example in the case *BHP Billiton Petroleum Ltd v Dalmine SpA*[7] could be used to illustrate this situation. The defendant supplied non-compliant pipe to be used in a pipeline construction whereas the claimant provided a defective welding procedure. Imagine the case where the welding procedure is finalised and provided before the non-compliant pipe is delivered and the failure of the pipeline was actually caused by the non-compliant pipe. Whilst it might be argued that the pipeline would have failed in any event (maybe at a later time) because of the defective welding procedure, the causal link in that case would be established with regards to the non-compliant pipe (the succeeding event) and the defective welding procedure (the preceding event) would be considered a "reserve cause".

The second scenario is where the effect of the preceding event is still continuing in a way so that the succeeding event had no effect at all, and hereby the causal link is only established with regards to the preceding event, which will be the "pre-emptive cause". The famous case of *Performance Cars Ltd v Harold James Abraham*[8] illustrates this principle. The defendant Y hit the claimant's luxury car,

[5] *McGhee v National Coal Board* [1973] SC (HL) 37.
[6] *Wright v Cambridge Medical Group* [2013] Q.B. 312.
[7] *BHP Billiton Petroleum Ltd v Dalmine SpA* [2003] EWCA Civ 170.
[8] *Performance Cars Ltd v Harold James Abraham* [1962] 1 Q.B. 33.

which had to be repaired. In particular, the lower half of the car had to be resprayed. Just before this accident, the car was hit by a different vehicle (of the defendant X), which also required the lower half of the car to be resprayed. However, at the time when the defendant Y hit the car, the car had not been resprayed. The defendant Y was held not liable for the cost of repairing the car because the car already needed to be resprayed, i.e. that the defendant Y had damaged an already damaged car.

The third scenario is when the effect of the preceding event combines with the effect of the succeeding event to produce the same damage. The two events here are "duplicative causes" and they are often referred to as "concurrent in effect". This case is distinct from that of the "cumulative causes" because the two events here are both independent and sufficient causes.

Causal link and delay analysis

The causal link mostly intersects and intertwines with the often perceived dark art of delay analysis, which is mainly concerned with investigating the reasons that caused a project to be late. As project delay is often the result of a number of simultaneous and consecutive causes, the analysis includes examining and assessing the time impact an event or a group of events have on the project completion as well as identifying the effective causes of the delay. In that regard, the same causation principles apply.

The case *Performance Cars Ltd v Harold James Abraham* seems to have inspired and supported the judgments made in more recent cases. For instance, an important distinction is being highlighted nowadays between a concurrent delay and a non-critical delay. It is held that an Event B cannot be considered as a concurrent cause of a delay where another Event A had already caused the delay,[9] or where the delay due to Event A had already started to take effect before Event B started, even when Event B would have delayed the project in any event had it happened in isolation.[10] The causal link in this case would be established with regards to Event A (the preceding event).

This principle is one of the main tenets of the Time Impact Analysis method of delay analysis (TIA), which requires that the delay impact of a particular event be assessed with reference to a programme that is updated with progress just before the start or trigger date of the event.[11] This allows the analyst to isolate the impact of previous events which might have already caused project delays. If the analysis shows that the project has already been delayed and was not delayed further after the occurrence of the subject event, the delay resulting from the event will be considered a non-critical delay rather than concurrent, even if this event would have delayed the project in any event in the absence of previous events. This has also been the underlying principle in the analysis methods that are based on the windows approach, where the extension of time (EOT) entitlement is assessed progressively based on sequential periods of the project considering the effect of the events at the time they occur and at the time the critical delays are identified.

[9] *Royal Brompton Hospital NHS Trust v Hammond (No.7)* [2001] EWCA Civ 206; (2001) 76 Con L.R. 149.
[10] *Saga Cruises BDF Ltd v Fincantieri SPA* [2016] EWHC 1875 (Comm).
[11] In contrast, an Impacted As-Planned method of analysis is carried out by reference to a baseline programme with no recourse to actual progress achieved.

In this case, concurrency would be evaluated distinctly for each window of time so that, at the end of each window, accounting of concurrency is closed and a new one is opened for the following window.

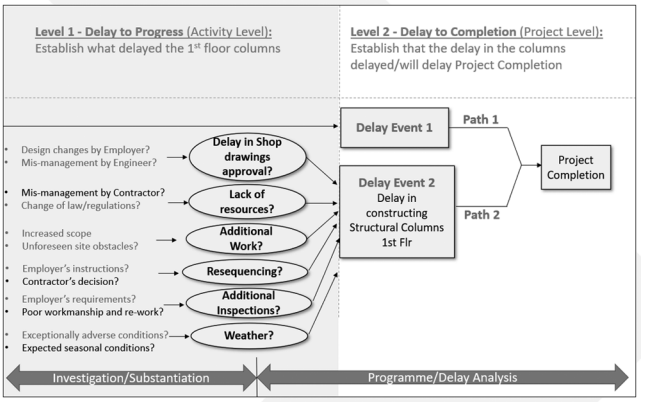
Concurrent delay is still, however, a very contentious issue as to what rule should the courts apply when deciding on matters of entitlement to EOT and financial compensation in cases of concurrency. Moreover, all methods of delay analysis have their own advantages and disadvantages which need to be considered in light of the context and the facts of each case.

Two main levels of proving factual causation

Evidently, in project delay claims, demonstrating factual causation applies on two main different levels. The causal link has to be established first at the level of the impacted activity, including the determination of the root cause, and second at the level of the overall project completion, or any contractual milestone date against which an EOT is sought. In that regard, it is worth noting that the existence of a project delay is either a matter of fact, where the project completion has been actually delayed, or a matter of prediction by way of project contemporaneous programmes. To clarify this further, a project delay is considered to have been incurred if an event which actually occurred and actually impacted the works (level 1), caused delay to the project completion or is going to cause delay according to the programme (level 2).

On this basis, it is important to be always reminded that the causal link, in delay claims, is not a matter that can be proved merely through programming software, nor is it a matter that is entirely outside the turf of delay analysis artwork. Demonstrating cause and effect relies primarily on the ability to provide a coherent, fact-based narrative including a detailed substantiated chronology describing the effect of the event(s) upon the claimant's performance and/or the works.

After having established the causal link between the event and its impact on the works, the claimant has to demonstrate that the event has delayed (or will delay) project completion, i.e. that it has delayed the critical path of the project, since the critical path is determinative of project completion at any point in time. At this stage, the programmes of works provide implemental tools which can assist in demonstrating the critical impact on completion and in quantifying the EOT entitlement.



The figure above is an oversimplified example from a construction project illustrating the different levels of establishing factual causation for an EOT claim relating to Delay Event 2 to succeed.

Importance of programmes

Whether or not the contract is in favour of a contemporaneous assessment and award of EOT, a critical path analysis is, without doubt, a crucial tool for the claimant to prove the causative effect of the event on project completion. It is worth mentioning that case law does not stipulate, however, that a critical path analysis is a mandatory element of an EOT application, although a calculated assessment with reference to programmes of work would be required as opposed to an impressionistic assessment.[12] This has even become more challenging as programming and delay analysis techniques are becoming more sophisticated due to the rapid evolution of the relevant programming software, as well as the emergence of different approaches and further variations to the same.

Due to further complications introduced by the existence of thousands of activities linked via different types of relationships and hundreds of delay events which are happening in different times throughout the timeline of a large and complex project, the method of delay analysis and the selection of an appropriate implementation technique will also come into play to help untangle all the issues related to float, contemporaneous versus retrospective determination of the critical paths, competing critical paths, the parties' culpability and the ultimate impact on project completion.

The SCL Delay and Disruption Protocol's second edition issued in February 2017 (the Protocol) stresses the importance of programmes of works. A well-prepared programme that is contemporaneously and accurately updated and communicated to the client on a regular basis will provide significant and irrefutable evidence with regards to when a certain delay event occurred and the extent to which it has critically impacted the works and subsequently affected completion. On the other hand, programmes that are reconstructed retrospectively, especially

[12] *John Barker Construction Ltd v London Portman Hotel Limited* [1996] 83 B.L.R. 31.

for the purpose of a forward-looking delay analysis, will be of little use in providing the required evidence.[13]

Although the current recommendations are in favour of the use of programming software for projects planning, monitoring and forecasting, it is obvious that the guidance in relation to delay analysis and causation is encouraging common-sense approaches that rely more on facts and less on computer-based simulations, and that whether the delay assessment is carried out prospectively or retrospectively, a proper analysis should not be dissociated with the facts and what actually happened.

Delay claims and the future

It is true that delay claims have taken up appreciable time in the courts and that the judges' understanding of technical issues continues to grow. However, the authorities on some vital issues such as causation and concurrent delays are not absolute and it is believed that each new case with its very specific facts will bring with it new authority, perhaps due to the inherent complexities of some delay analysis techniques and the collateral principles of causation.

It is mistakenly believed, however, that different methods of delay analysis provide different answers to the same question. The truth is that each method of delay analysis, with all the available variations and nuances, provides a specific answer to a specific question. The tipping point is to raise the right question based on the contractual provisions in force. Understanding causation principles is equally important as it sets the ground for the various rules used in the different main methods of delay analysis in their prospective and retrospective forms.

It is expected that due to technological advancement a multitude of tools could be further introduced allowing the claimant to adduce the required evidence to discharge the burden of proof mindful of the importance of identifying the causal link and then replicating the same in the application of delay analysis.

[13] P.J. Keane and A.F. Caletka, *Delay Analysis in Construction Contracts*, 1st edn (New Jersey: Wiley-Blackwelll 2008), p.179.