

Having previously reviewed the basic characteristics of disruption<sup>1</sup> in complex construction and engineering projects, we would now like to turn our attention to the methods that can be used to assess it.

So, starting with the basics, in this article we discuss why there is even a need for disruption analyses, and what we mean by “proving disruption” – in arbitration, litigation, or simply negotiation settings.<sup>2</sup>

## What constitutes “proof” in construction claims?

“Proof”, in its simplest form, is the establishment of a fact by use of evidence. And, in any discussion of proof, it is important to understand two fundamental concepts: (i) the burden of proof, and (ii) the standard of proof.

### The burden of proof

The ‘burden of proof’ is the obligation to prove what is alleged. As is the case in most types of claims (especially in disruption -and delay- ones), the onus of proof is on the claimant (typically the contractor<sup>3</sup>), who is then required to produce the evidence that will support his (or her) allegations against the respondent (typically the ‘employer’, or ‘client’).

### The standard of proof

In construction and engineering projects, most contracts stipulate the standards of substantiation required in claims. However, there is a general principle that should always be borne in mind: While in criminal matters the standard of proof required is ‘beyond reasonable doubt’, in civil matters (like disruption claims) proof needs to be established based solely ‘on the balance of probabilities’ (also formulated as being based ‘on the preponderance of the evidence’.)

In practical terms, this means that the claimant must produce a narrative that is supported by the available evidence, and that is deemed more probable than any alternative narrative that the respondent might offer. Therefore, it is equally important to attempt to prove that one’s case is the most probable, as it is to show how the case produced by one’s opponent is highly improbable.<sup>4</sup>

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<sup>1</sup> Please see “03 Disruption: Such a Tricky, Elusive Animal...”. All articles in this series can be found on our website, at [www.constructiondynamics.global/on-disruption-and-delay](http://www.constructiondynamics.global/on-disruption-and-delay).

<sup>2</sup> Please note that the objective of this article is simply to provide a brief introduction into these topics, suitable for non-legal minds. Nothing written here should be construed as legal advice in any way, shape or form.

<sup>3</sup> When claiming against the client. The claimant could also be the subcontractor, when claiming against the contractor

<sup>4</sup> Appeal of Centex Bateson Const. Co., Inc., VABCA No. 4613, 99-1 BCA P 30153 (Dec. 3, 1998): “This proof may take the form of demonstrating that there are no other reasons for a loss of productivity for which the [respondent] is not responsible.”

# The 'Triad of Proof'

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## Evidence

In layman's terms, "evidence" is essentially anything that can be presented in a legal proceeding that would, either directly or indirectly, help to establish the fact of the case.<sup>5</sup>

The strongest form of evidence is that which directly proves a factual aspect of the case. In construction disputes, factual evidence can come in various forms: exhibits (e.g., physical objects), documentary material (correspondence, monthly / daily reports, programme updates, various types of logs, payment certificates, etc.), or other demonstrative evidence (e.g., oral or written witness statements.)

However, this kind of evidence is hardly ever sufficient to prove the whole case of disruption: in this type of claim, one rarely finds a "smoking gun", a set of project facts that are (by themselves) sufficient to completely prove what is claimed. Thus, disruption claims typically require an additional kind of evidence to "fill in the gaps of the story", so to speak: expert evidence.

## Disruption assessment methods

Experts makes inferences about aspects of the claim for which there is no direct evidence, based on the facts in the case. In disruption claims, these inferences are generally made by applying different 'assessment methods', i.e., accepted sets of rules and algorithms. Considering that, normally, there is not sufficient direct evidence to prove disruption, analyses using appropriate assessment methods are (invariably) critical to the success of this type of claim.

In subsequent articles, we will analyse the effectiveness of some of the most common disruption assessment methods, comparing their relative strengths and weaknesses, and looking at their suitability in different kinds of situations. But, in order to get there, we first need to look at the set of requirements that a disruption assessment method generally needs to fulfil in order to prove entitlement.

## Proving entitlement: The 'Triad of Proof'

Probably, we all intuitively "know" when a certain assessment method "works", i.e., when the method provides results that show that one party disrupted the other. But it was only recently (in 1998), that the Veterans Affairs Board of Contract Appeals (VABCA) described the legal requirements for entitlement explicitly:<sup>6</sup>

*"[...] when the owner causes a disruption, the contractor is not automatically entitled to additional compensation. To recover additional compensation for project inefficiencies, the contractor must prove (1) liability, i.e., the owner was contractually responsible for the impact; (2) causation, i.e., the impact caused the labour overruns; and (3) Resultant cost increase, i.e., the impact actually caused a compensable loss."*

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<sup>5</sup> Stephen, J., 1872, "The Indian Evidence Act, with an Introduction on the Principles of Judicial Evidence", Calcutta, Thacker, Spink & Co., p.3-4 6-7.

<sup>6</sup> Centex-Bateson Construction Co., Inc., VABCA Nos. 4613, 5162 through 5165, 99-1, BCA ¶ 30,153; referenced in Klanac, G. P. and Nelson E. L. (2004) Trends in Construction Lost Productivity Claims. J. of Professional Issues in Engineering Education and Practice, American Society of Civil Engineers, 130(3):225-236.

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In England, Mr. Justice Aikenhead expressed similar views in his 2012 ruling in the *Walter Lilly* case<sup>7</sup>. So, because these requirements are important, we will repeat them once more: In order to prove entitlement in a case, one must...

- a) Identify the events for which the employer was responsible, and against which the contractor would be entitled to claim ("liability".)<sup>8</sup>
- b) Show how these events caused disruption ("causation".)
- c) Quantify the additional cost caused by the disruption ("quantification" of the damage caused.)

Taken together, these three requirements have been named the "Triad of Proof" (Thomas, 2008)<sup>9</sup>, and they are the criteria by which entitlement to disruption is evaluated.

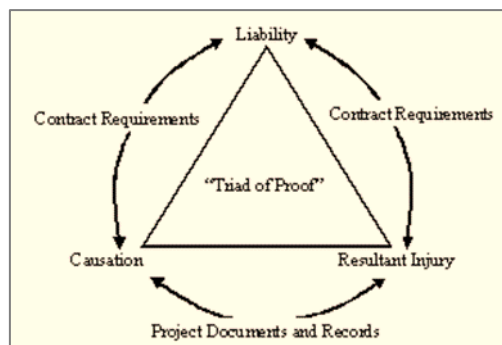


Figure 5: The Triad of Proof (Thomas, 2008)

### Liability

In essence, determining which events would entitle the contractor to claim for disruption is purely a contractual / legal matter, and as such an assessment method will play little or no part in this.

However, assessment methods will almost invariably need to be able to comply with these determinations, and be able to differentiate between the disruption caused by employer-responsible events from that for which the contractor himself may be responsible.

### Causation

In order to prove factual causation (i.e., that an employer-responsible event caused resulting damage), the contractor must show that "but for" the respondent's action(s), the harm would not have happened as it did (or when it did.) Or, as often expressed in civil law jurisdictions: the contractor must prove that the employer-responsible event was a necessary (*sine qua non*) condition for the harm to occur.

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<sup>7</sup> *Walter Lilly & Company Limited v (1) Giles Patrick Cyril Mackay (2) DMW Developments Limited* [2012] EWHC 1773 (TCC).

<sup>8</sup> Of course, determining the owner's responsibility for a disruptive event is a legal / contractual matter – but once this has been established, an assessment method needs to take this into account.

<sup>9</sup> Thomas, H. Randolph, "The Challenges of Lost Productivity – Proving and Quantifying a Claim", Part 1, Chapter 2: "Causation and Cause-Effect Analyses", WPL Publishing Co. (2008)

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## Quantification

The final requirement for entitlement consists in being able to quantify the extent of the harm caused by the employer-responsible event. And the catch: disruption claims can normally only be made for actual damage incurred – so, it is not sufficient to assess the costs that “would have” or “should have” occurred as a result of the disruption, instead the assessment method needs to be able to determine the costs that were actually incurred because of it.

## Which method should I use?

In this article, we have described the requirements that disruption assessment methods need to fulfil in order to be able to prove entitlement to disruption – in principle. Next, we want to explore what additional practical considerations one should also take into account when choosing the right method for a particular disruption claim, and then we will attempt to reach a conclusion regarding the strengths and weaknesses of each method in different types of situations.

But... before we do so, we feel that we need to even out the playing field a bit: Most disruption assessment methods are well known in the industry, but there is one with which you are probably not yet familiar – so our next article will be devoted to System Dynamics.



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