

# 9/11 and Probability Theory

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## Introduction

There have been a number of authors who have drawn attention to the improbability of certain reported events that led up to the disaster that has become known as 9/11, in which three major buildings at the World Trade Centre collapsed with heavy loss of life. Both Boolean algebra and probability theory have been invoked as a means of estimating the likelihood that the official explanation of the event as a whole can be relied upon.<sup>1</sup>

The official explanation for the building collapses may be distilled from the reports of the investigations carried out by three government bodies: FEMA,<sup>2</sup> NIST<sup>3</sup> and the 9/11 Commission.<sup>4</sup>

Although these three substantial investigations have taken place there is still uncertainty about how the attack came about and what took place that day. The co-chairs of the 9/11 Commission themselves have contributed to this uncertainty with their disturbing book, which cites difficulties that they encountered.<sup>5</sup> There are now many scientific papers disputing the reports and pointing out critical inconsistencies within the reports. A good source of such papers is the Journal of 9/11 Studies.<sup>6</sup> The present paper will not address the probability of events said to have led up to the attack but will focus on the manner of collapse of the twin towers. Some reference to building 7 will be included.

## Discussion

The NIST report contains no calculations to explain how the towers collapsed. Improbable though it may seem their lengthy and detailed simulation stops short at the moment when the buildings were said to be “poised for collapse”. For the collapse itself the authors rely almost entirely on the paper by Bazant and Zhou.<sup>7</sup> This paper provides a hint of improbability right from the start in that it was presented just two days after 9/11, an extraordinary feat for a complex scientific work. We will extract the stages of the collapse from their paper:

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<sup>1</sup> 911 Review: <http://911review.com/means/index.html>; Global Research: <http://www.globalresearch.ca/articles/DAV504A.html>

<sup>2</sup> Federal Emergency Management Authority Report: <http://www.fema.gov/rebuild/mat/wtcstudy.shtm>

<sup>3</sup> National Institute of Standards and Technology Report: <http://wtc.nist.gov/>

<sup>4</sup> This is an abbreviated title for the National Commission on Terrorist Attacks upon the United States: <http://govinfo.library.unt.edu/911/report/index.htm>

<sup>5</sup> The co-chairs of the 9/11 Commission, Keane and Hamilton, have written a book in which they state that they were denied access to essential information and given information which was incorrect. “We were set up to fail”: <http://www.nyc911initiative.org/faqs.htm#top>

<sup>6</sup> Journal of 9/11 Studies: <http://journalof911studies.com/>

<sup>7</sup> Bazant, ZP and Y Zhou: <http://www.civil.northwestern.edu/people/bazant/PDFs/Papers/405.pdf>

1. The plane impact damages some columns and dislodges fireproofing material.
2. The burning jet fuel and office material heats the columns to 800°C.
3. The columns, weakened by heat, buckle and rapidly lose strength for a height of at least one storey.
4. The top of the building above the damaged region falls freely toward the region below as a solid block.
5. The impact of the falling block immediately initiates disconnection of the floor trusses from the columns, which permits further buckling of the columns below.
6. The falling block, now heavier and falling more rapidly, collides with the structure below, repeating the damage, “and the series of impacts and failures then proceeds all the way down”.

The only significant difference between this list and that in the NIST report is that the latter includes, at point 3 above, the assertion that the collapse is initiated by the sagging of floor trusses which pull the exterior columns out of alignment along part of one wall. This is not very convincing however as their tests of floor trusses in furnaces did not result in significant sagging. An “Application for Correction” has been submitted to NIST over this and many other apparent errors,<sup>8</sup> but the reply was unsatisfactory. An “Appeal” was then lodged but no reply has been received, though it is long overdue.<sup>9</sup> An attempt has also been made to engage NIST in debate about the inconsistencies in their report but so far without success. An account of this is given in a civil engineering journal.<sup>10</sup>

### **Alternative theory**

The alternative theory, that the towers collapsed due to controlled demolition using explosives, has been presented by numerous scientists and engineers. They list the following evidence and conclusions:

1. The steel in the towers never did achieve temperatures sufficient to begin collapsing. NIST reports that very few samples of steel showed evidence of having been at temperatures higher than 250°C.<sup>3</sup> For collapse to become a possibility the steel would have to be over 650°C and at that temperature it would be red-hot,<sup>11</sup> yet no red-hot steel was observed prior to collapse. The NIST simulation provides charts which show that the steel at the time of collapse was too cool to allow collapse to occur,<sup>3, 12</sup> a

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<sup>8</sup> <http://journalof911studies.com/volume/200704/RFCtoNISTbyMcIlvaineDoyleJonesRyanGageSTJ.pdf>

<sup>9</sup> <http://journalof911studies.com/volume/2007/AppealLetterToNISTGourleyEtAl.pdf>

<sup>10</sup> <http://www.bentham-open.org/pages/content.php?TOCIEJ/2008/00000002/00000001/35TOCIEJ.SGM>

<sup>11</sup> [http://kovarna.webzdarma.cz/stranky/zakladni\\_postupy/tabulky\\_teplo.htm](http://kovarna.webzdarma.cz/stranky/zakladni_postupy/tabulky_teplo.htm)  
<http://hypertextbook.com/physics/waves/color/>

<sup>12</sup> [http://journalof911studies.com/articles/Article\\_6\\_Pancake\\_theory\\_false\\_by\\_NIST\\_WorldTradeCenter.pdf](http://journalof911studies.com/articles/Article_6_Pancake_theory_false_by_NIST_WorldTradeCenter.pdf)

conclusion which is supported by a photograph of a woman standing in the gap where the plane entered the north tower.<sup>13</sup>

2. The inherent strength of the tower columns, with substantial design safety factors, would be too great to permit the impact of the falling top block to dislodge the storey below. The energy in the falling block would be all consumed in elastic and plastic compression of the columns before sufficient stress had been created to initiate buckling.<sup>14</sup>
3. If the heated and damaged storey did start to collapse, the initial descent would not be rapid so there could be little impact. It is a property of steel that it becomes stronger as it distorts. To overcome this property, commonly known as “work hardening”, the steel would have to become hotter.<sup>15</sup> That would take time.
4. If the impact had destroyed the storey below, and started a chain reaction, as in Bazant’s theory, the collapse would have taken longer than observed. This is proved by application of the law of conservation of momentum.<sup>16</sup>
5. No mechanism is presented by Bazant to explain why the impact of the falling block should destroy the lower portion of the building rather than the block itself. Indeed the assertion that the steel in the block has been heated by fires to the point of collapse,<sup>3</sup> if true, would have ensured the collapse of the block.
6. If one looks at the videos of the collapse of the north tower it is obvious that the top block does disintegrate first. The rigid falling block which Bazant and NIST rely upon to rapidly destroy the undamaged, unheated lower portion of the building ceased to exist, or at least was greatly reduced, before it could function as a hammer.<sup>17</sup> This is however not proof that the block was very hot as other explanations are possible.
7. The buildings came down too straight. For random unsymmetrical fires to heat the columns so uniformly that a building would collapse straight down is highly improbable. For such a thing to happen three times in one day is improbable in the extreme. In the case of building 7, in which the fire had virtually burned out or was confined to one side of the building, a straight down collapse was not merely improbable but impossible.<sup>18</sup>
8. It was observed that localized heating to temperatures far higher than can be achieved by the burning of jet fuel and office materials occurred in the south tower. Incendiary materials are implicated.<sup>3, 8</sup>

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<sup>13</sup> [http://www.whatreallyhappened.com/wtc1\\_woman.html](http://www.whatreallyhappened.com/wtc1_woman.html),  
<http://journalof911studies.com/volume/2007/LeggeConspiracy&Myth7b.pdf>

<sup>14</sup> Gordon Ross: [http://journalof911studies.com/articles/Journal\\_5\\_PTransferRoss.pdf](http://journalof911studies.com/articles/Journal_5_PTransferRoss.pdf)

<sup>15</sup> Szamboti, T and F Legge:  
[http://journalof911studies.com/volume/200703/Sudden\\_collapse\\_initiation\\_impossible.pdf](http://journalof911studies.com/volume/200703/Sudden_collapse_initiation_impossible.pdf)

<sup>16</sup> Kuttler, K: <http://journalof911studies.com/letters/ProfKuttlerWTC1CollapseTimeCalculations.pdf>

<sup>17</sup> [http://911research.wtc7.net/wtc/evidence/videos/nt\\_ne.html](http://911research.wtc7.net/wtc/evidence/videos/nt_ne.html)

<sup>18</sup> [http://journalof911studies.com/volume/2007/LeggeVerticalCollapseWTC7\\_6.pdf](http://journalof911studies.com/volume/2007/LeggeVerticalCollapseWTC7_6.pdf)

9. The discovery of small iron-rich spheres in the dust provides startling evidence. The fact that these are spherical proves that the material was once molten, and their small size shows that something very violent scattered the material into the air, where it cooled and solidified. To be molten is further evidence for temperatures far higher than ordinary fires can produce. Analysis of these spheres shows that they contain aluminium and other elements characteristic of thermite and derivatives of thermite. These materials are either explosive or incendiary.<sup>19</sup>
10. The recent discovery of small particles of unreacted thermite in the dust appears to seal the case. This material was found in samples taken from four locations for analysis. It is hard to think of any innocent way in which substantial quantities of thermite and thermite residues could be so uniformly present in the dust.<sup>20</sup>

## Comparison and Conclusion

If we compare these two explanations for the collapse of the towers it is immediately apparent that they are different in a particularly significant way: the fire based official explanation is a series of events,<sup>21</sup> like links in a chain, while the explosive based explanation is a parallel set of scientific studies of evidence. When challenged they behave in very different ways:

If an explanation is in the form of a chain it is only necessary to prove one link wrong to destroy the case. In contrast, with a parallel set of explanations it is only necessary to prove one explanation correct to establish the case. What do we find?

It has already been pointed out that links 2 to 6 of the official explanation are incorrect and link 1, about the fireproofing, has been strongly disputed.<sup>22</sup>

In the case of the alternative explanation we have a list of 10 studies which show that certain observations can only be explained if explosives were involved. Just one of these is enough to make the case. There are now hundreds of scientists, including architects, engineers, demolition experts, physicists and other specialists, who are arguing that the case for explosive demolition has been more than adequately made and who are calling for a truly independent investigation.<sup>23</sup>

Given the devastation in the Middle East<sup>24</sup> which flowed from this tragedy, should we not all be calling for a new investigation? If we do not, does the evidence not suggest that we will be at risk of being called complicit in the development of a ruthless regime by future generations?

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<sup>19</sup> <http://journalof911studies.com/articles/WTCHighTemp2.pdf>

<sup>20</sup> <http://www.911blogger.com/node/13090?page=1>

<sup>21</sup> Although these links in the chain are here referred to as “events” they would more properly be described as suppositions as they are not derived from observations. No evidence is presented that the steel reached 800°C, or that a sudden gap in the structure developed.

<sup>22</sup> Ryan, K: <http://www.journalof911studies.com/letters/b/MackeyLetter.pdf>

<sup>23</sup> Architects and Engineers: <http://www.ae911truth.org/>; Scholars for 9/11 Truth and Justice: <http://www.stj911.org/index.html>; Pilots for 9/11 Truth: <http://www.pilotsfor911truth.org/>

<sup>24</sup> [http://onlinejournal.com/artman/publish/article\\_2958.shtml](http://onlinejournal.com/artman/publish/article_2958.shtml)