

### 3. Science and Technology in Dan Brown's *Digital Fortress*

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#### **Abstract:**

*Brown is an American author of thriller fiction. Brown can spend up to two years writing them. To remain focused on such projects, Brown ensures that when he chooses a theme for the novel and its subject, that they be those that can hold his interest. In Brown's view, the ideal topic does not have an easily defined right or wrong view but presents a moral grey area that can lend itself to debate. Because his favourite subjects include codes, puzzles, treasure hunts, secretive organisations and academic lectures on obscure topics, he tends to incorporate those into his novels. Because Brown considers writing to be a discipline that requires constant practice, he has developed a routine to maintain his abilities.*

#### **Keywords:**

*Secret words; threats; suspense; Security Agency*

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## Science and Technology in Dan Brown's *Digital Fortress*

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Daniel “Dan” Brown is an American author of thriller fiction. His novels that feature the lead character Robert Langdon also include historical themes and Christianity as motifs, and as a result, have generated controversy. Brown states on his website that his books are not anti-Christian, though he is on a ‘constant spiritual journey’ himself, and says that his book *The Da Vinci Code* is simply an entertaining story that promotes spiritual discussion and debate and suggests that the book may be used as a positive catalyst for introspection and exploration of our faith.

Brown puts his heroes into a situation where they are on the run, or on an adventure in completely unfamiliar settings. The hero of *Digital Fortress*, David Becker, finds himself on the run through a landscape of ancient Moorish towers, Sevillian barrios, and the Cathedral of Seville. Much of the early work is to place these locations in a workable sequence such that the character can move from one to the next in a logical manner.

*Digital Fortress* is an example of techno-thriller at its very best. But what makes *Digital Fortress* stand out from the crowd are its other elements: a real love story and an examination of the struggles between the right and wrong and production of the public versus the preservation of that same public’s privacy.

John Barnes observes in his work *Washington Pi Journal* “Twists and turns are Brown’s stock in trade and paces their unveiling in a manner that is properly sinister” (58). Brown also interview with Clair White in *Internet Writing Journal* “I worry Sometimes that, because we talk about cryptography and the NASA that people think, ‘Oh, it’s a computer book,’ but it’s so much than that” (32).

*Digital Fortress* is set inside the US National Security Agency (NSA), which monitors communications from around the world, via internet and email, for anything that would be a threat to US security. The core of the NSA is a multi-billion dollar computer called TRANSLTR that has three million processors enabling it to decode any encrypted messages almost instantly and the NSA to pick up potential terrorist threats.

TRANSLTR is merely decoding thousands of messages from around the world until suddenly it comes across a code that it cannot break. The agency calls in its top cryptographer, beautiful mathematical genius Susan Fletcher, to help break the deadlock. Without her knowledge, the agency has also brought her fiancé, David Becker, into the equation. An expert in foreign languages and a professor who has assisted the NSA before, Becker is sent to Spain to retrieve the ‘kill code’ or passkey that will enable TRANSLTR to break the code.

As the story unravels, a former employee of NSA’s Crypto division, the brilliant Ensei Tankado, has written this unbreakable code called Digital Fortress because he believes that TRANSLTR is immoral and that the world should be aware that the US is listening in to everything. However, Tankado is murdered in Spain before Becker can get to him. Becker believes the code is written on a ring that Tankado gave to a tourist just before he died and Becker needs to find that ring. From this moment on Becker is in a race against the clock to get the ring back while being hunted by an assassin bent on killing him.

Meanwhile, Susan Fletcher is working hard to break the code and as she does, she uncovers layers of lies and deception. The plot twists and turns as people she thinks she can trust are the ones who cannot be trusted and her world is turned on its head. She soon discovers that Digital Fortress is more than just an unbreachable code: it has the power to bring down the US government’s entire security systems, which once breached, will open up all of the US government secrets-including the launch codes for nuclear missiles-to hackers, terrorists and any other malignant attack!

Brown got his ‘big idea’ for the book while he was teaching English at Phillips Exeter. “ In the spring of ’95, two US Secret Service agents showed up on the campus of Phillips Exeter and detained one of our students claiming he was a threat to national security...He wasn’t, of course, and not much came of it. The incident however really stuck with me” (76).

Brown could not understand how the Secret Service had known what the student had written in his email. It bothered him, so he began to do research to find the answer. The more he looked, the more shocked he was. “What I found out absolutely floored me. I found out there is an intelligence agency as large as the CIA... that only about two percent of Americans knows exists” (93). That agency was the NSA. “The agency functions like an enormous vacuum cleaner sucking in intelligence data from around the globe and processing it for subversive material. The NSA’s supercomputers scan to email and other communications, looking for dangerous word combinations like “kill” and “Clinton” in the same sentence. The more I learned about this ultra-secret agency and fascinating moral issues surrounding national security and civilian privacy, the more I realised it was a great backdrop for a novel. That’s when I started writing *Digital Fortress*.

*Digital Fortress*, Brown tells about how NSA’s technical people were easily able to intercept email. This, he states, was in the early days of the internet in the 1980’s: “The internet was not the new home computer revelation that most believed. It had been created by the department of Defence three decades earlier-an enormous network of computers designed to provide secure government communication in the event of nuclear war.” (120).

In the same section, Brown goes on to write about how email became more difficult for the NSA to crack. HE claims it was made more Secure by the use of public-key encryption: “It consisted of easy-to-use, home-computer software that scrambled personal email messages in such a way that they were totally

unreadable” (150). At the other end of the email process, messages would come out looking like random letters and numbers. According to Brown, the only way to unscramble the email message was to enter the sender’s “Pass-key” – a secret series of characters that functioned much like a PIN number at an automatic teller.

This idea of a pass-key is crucial to the story; because this is what is supposed to unlock Tankado’s code and stop the meltdown of all the secrets in the NSA’s databanks. The pass-keys were generally quite long and complex; they carried all the information necessary to instruct the encryption algorithm, exactly what mathematical operations to follow to recreate the original message.

In the novel, Brown states that the new pass-keys used chaos theory and multiple symbolic alphabets to scramble the messages into complete nonsense. The NSA’s computers were able to handle the first pass-keys because they were short and relatively easy to break using trial and error. If a desired pass-key had ten digits, a computer was programmed to try every possibility between 0000000000 and 9999999999. Sooner or later the computer hit the correct sequence (190).

Brown goes on to tell that this method was known as ‘brute force attack,’ which, while time-consuming, was guaranteed to work. However, the pass-keys got longer because the world got wise to the power of brute force code breaking. The time to break the codes increased days to weeks, then to months and to years. By the mid-1990s the pass-keys used the full 256 character ASCII alphabet of letters, numbers and symbols, and “the number of different possibilities was in the neighbourhood of  $10^{120}$  with 120 zeros behind it” (189).

Brown then states that at the time the NSA’s fastest computer, the Cray/Josephson II, took more than 19 years to break a 64-bit code in a brute force attack. To break this deadlock and speed up the code-breaking, the NSA set out to build a computer that was lightning fast. “The last of the three million stamp-sized processors was hand-soldered in place, the final internal programme was finished, the ceramic shell was welded shut. TRANSLTR has been born” (195).

This new supercomputer had three million processors working in parallel to break any code that it intercepted. It would use “the power of parallel processing as well as some highly classified advances in cleartext assessment to guess pass-keys and break codes” (191), in *Digital Fortress*. It would derive its power not only from its staggering number of processors but also from new advances in quantum computing—an emerging technology that allowed information to be stored as quantum mechanical states rather than solely as binary data.

Research is the key to Brown’s craft. He states in his book *Dan Brown’s Enigma*, “I did read a lot of books about cryptography and the NSA’s advanced technology. The hardest part was sifting through babble and simmering it down to something fairly non-technical that anyone could understand and that would not

bog down the plot” (17). But he had to be sure that his research was as accurate as it could be, so he read as much as he could about cryptography. “I posted some questions to a cryptographic newsgroup”(17), he said in an interview with Claire White on the *Internet Writing Journal*, “I ended up talking to some people whom I later found out were former NSA people. I was also fortunate to meet face to face with a Trusted Agent with the US Commission on Secrecy. Although these people never shared anything classified they me sort through a lot of recently declassified data through the Freedom of Information Act” (44).

Brown also turned to a wide variety of sources and spent a lot of time on Usenet groups on the Internet. These are forums where like-minded people can discuss or post questions to people interested in specific topics. “Brown has said that he relied on Usenet groups to ask questions pertinent to his research, and in some cases, these initial queries developed into close friendships later on” (103), says Lisa Rogak in her biography of Brown.

Brown’s research revealed some startling information. “There are a number of intelligence sources who have written extensive white papers on the NSA” (21), he said in his book *Dan Brown’s Enigma* The writer discovered that the US government’s eavesdropping on their citizens and on countries around the world was far more insidious that he had thought. They certainly buried the hooks they need to monitor traffic. They also have satellites that can listen to cellular phone calls and all sorts of other electronic eavesdropping devices.

Brown states in James Bamford’s book *The Puzzle Palace*, “Although dated, it is still one of the seminal books on the cover world of America’s premier intelligence agency, describing how the NSA pulls in intelligence data from around the globe, processing it for subversive material” (33).

Brown was indignant at this massive invasion of privacy. However, he believes that even with this technology listening to everyone, the NSA is not really interested in the ordinary person. Agencies like the NSA are far more interested in terrorists than in the average citizen and most of us have nothing to worry about. Of course, the pros and cons of living in an Orwellian Big Brother are Watching kind of society can be debated forever.

One of the former NSA cryptographers also faxed him a transcript of a Senate Judiciary Hearing, where the then director of the FBI, Louis Freech, testified that in one year alone-”I believe the year was 1994-the NSA’s ability to infiltrate civilian communication had thwarted the downing of two US commercial airliners and a chemical weapons attack on US soil” (59).

Dan Brown’s laudable detailed research makes in *Curled up With a Good Book*, this book so realistic it’s scary. Moreover, it will provoke readers to think and wonder if this loss of privacy and violation of human rights is justified by the horrific terrorist plots foiled and lives spared daily. It is an interesting dilemma. It is this research that gives *Digital Fortress* its authority and certainly provides the reader with insight

into cryptography and the NSA. Brown tells that President Truman founded the NSA on the morning of 4 November 1952 but the Congressional Record did not record this event in any way. The role of this new super-secret agency was to wage information war by stealing the secrets of people and governments hostile to the US. “Today the agency has a \$12 billion annual budget, about 25,000 employees, and an 86 acre heavily armed compound in Fort Meade, Maryland. It is home to the world’s most potent computers as well as some of the most brilliant cryptographers, mathematicians, technicians, and analysts” (210), says in *Digital Fortress*.

Even though Brown spent considerable time researching the book there are many who believe that some of the information is inaccurate. As a computer programmer found some of the research a bit in a week. For example, in this novel, a computer programmer could have bugs in it if the programmer typed in a comma instead of full stop. In the real world, this program would not compile, let alone run.

Brown tells that they are composites of people he knows. They are also a bit larger than life (something for which a few people have criticised me), but this is an escapist, fun novel, and he personally enjoys reading about characters that have exceptional talents like code-breaking or multiple language skills.

In *Digital Fortress* Brown raises the tension and suspense by several notches. Chartrukian has been thrown over the catwalk onto the generators below, causing enough damage for the generators to stop working: Phil Chartrukian was sprawled across the sharp iron fins of the main generator. His body was darkened and burned. His fall had shorted out Crypto’s main power supply. Then all hell breaks loose when the warning horns start blaring. This is a crucial turning point because now the reader is faced with characters who are trapped inside with a giant computer that not only has a virus that threatens all the NSA data banks but that same computer is about to blow. To make matters worse, she discovers her fiancé is in grave danger when she reads the suicide note left by Greg Hale, who supposedly shot himself: “And above all, I am truly sorry about David Becker. Forgive me, I was blinded by ambition” (78).

But it is not Susan Fletcher whose world is turned upside down. Brown uses his supporting characters to push the plot forward as well. In Spain, David runs across several small characters, from a fat German tourist with a prostitute to the assassin Hulaholt, who is trying to kill him. In between, he runs into punks, an old French Canadian and a girl with spiked pink hair who has Tankado’s ring.

All of his books deal with secrecy-covert agencies, conspiracies, classified technologies, secret history. David Becker signs his messages to Susan without wax—a code that Susan has real problems breaking, much to the delight of David. Brown reveals this code at the end of the book when he includes a little bit of history:

During the renaissance, Spanish sculptors who made mistakes while carving expensive marble often patched their flaws with *cere*—“wax”. A statue that has no flaws and required no patching was hailed as a “sculpture

sin cera” or a “sculpture with out wax”. The phrase eventually came to mean anything honest or true. The English word “sincere” evolved from the Spanish *sin cera*-”with out wax”. David’s secret code was no great mystery-he was simply singing his letters “Sincerely”. Somehow he suspected Susan would not be amused. (28)

After writing the novel Brown wanted to share some of the research he had discovered, so he posted it on the *Digital Fortress* website. While he was researching the book there was so much information about the National Security Agency, about global terrorism, about intelligence gathering that could not be worked into the novel. He wanted people to see that what he was writing about was, in fact, true, saying, people would email to say that there was no way that there is an agency that can do this.

If apply the five principles for thriller-writing to *Digital Fortress*, then by and large the books four of the five principles. First it is entertaining, it provides an insight to the NSA reflects the world around it through the settings in Spain, Washington, the use of email, gadgets and so on. At its heart it is an adventure. Brown cuts back and forth between the NSA where everything is going wrong, and with Spain where Becker is racing against time to find the ring. It is a stylish, edge-of-your-seat thriller. The one thing it does not have is humour but this is made up for by lashing suspense, pace and tension.

## References:

- Brown, Dan. (1998). *Digital Fortress*. New York: Double Day. Print.
- Barnes, John. (2001). *The Evidential Power of Beauty: Science and Theology Meet*. New York: Ignatius Press. Print.
- White, Clair. (2011). *Dan Brown’s Science and Religion*. *American University of Sharjah, United Arab Emirates*: 3 September 2011. Print.



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