

# 《Zero Day》字幕翻译

1

00:00:45,412 --&gt; 00:00:47,513

Through the darkness

2

00:00:47,515 --&gt; 00:00:51,750

of the pathways that we marched,

3

00:00:52,819 --&gt; 00:00:55,854

evil and good lived

side by side.

我们在黑暗中前行，恶魔与天使并存，

4

00:00:55,856 --&gt; 00:00:58,924

And this is the nature of...

Of life.

这就是生活的本质。

5

00:01:15,041 --&gt; 00:01:17,342

&lt;i&gt; We are in an unbalanced&lt;/i&gt;

6

00:01:17,344 --&gt; 00:01:21,547

&lt;i&gt; and in equivalent confrontation&lt;/i&gt;

&lt;i&gt; between democracies&lt;/i&gt;

7

00:01:21,549 --&gt; 00:01:23,916

&lt;i&gt; who are obliged&lt;/i&gt;

&lt;i&gt; to play by the rules&lt;/i&gt;

8

00:01:24,551 --&gt; 00:01:27,986

&lt;i&gt; and entities who think&lt;/i&gt;

&lt;i&gt; democracy is a joke.&lt;/i&gt;

民主国家之间的对抗是不平衡、不平等的，那些被迫遵守游戏规则的人和团体认为民主是一个笑话。

9

00:01:30,090 --&gt; 00:01:32,458

You can't convince fanatics

10

00:01:32,460 --&gt; 00:01:37,062

by saying,

"hey, hatred paralyzes you,

11

00:01:37,064 --&gt; 00:01:38,664

love releases you."

你不能够通过诸如这样的话“嘿，憎恨麻痹了你，只有爱才能释放你”来说服那些盲信者。

12

00:01:39,766 --&gt; 00:01:44,036

There are different rules that

we have to play by.

这里存在着我们必须遵守的各种规则。

13

00:01:59,619 --&gt; 00:02:02,287

Female newsreader:&lt;i&gt; Today, two of&lt;/i&gt;

&lt;i&gt; Iran's top nuclear scientists&lt;/i&gt;

14

00:02:02,289 --&gt; 00:02:04,256

&lt;i&gt; were targeted by hit squads.&lt;/i&gt;

女新闻播报员：今天，两名伊朗首席核科学家不幸成为了恐怖主义团伙的攻击目标。

15

00:02:04,258 --&gt; 00:02:06,291

Female newsreader 2:

&lt;i&gt; ...In the capital Tehran.&lt;/i&gt;

女新闻播报员 2：该袭击发生在首都德黑兰。

16

00:02:06,293 --&gt; 00:02:07,926

Male newsreader:&lt;i&gt; ...The latest&lt;/i&gt;

&lt;i&gt; in a string of attacks.&lt;/i&gt;

男新闻播报员：最新的一系列恐怖袭击。

17

00:02:07,928 --> 00:02:10,162

Female newsreader 3:<i> Today's</i>  
<i> attack has all the hallmarks</i>

18

00:02:10,164 --> 00:02:12,331

<i> of major strategic sabotage.</i>  
女新闻播报员 4: 今天的攻击行为具备针对重大战略设施进行破坏的所有特征。

19

00:02:12,333 --> 00:02:13,432

Female newsreader 4:  
<i> Iran immediately accused</i>

20

00:02:13,434 --> 00:02:14,666

<i> the U.S. and Israel</i>

21

00:02:14,668 --> 00:02:16,535

<i> of trying to damage</i>  
<i> its nuclear program.</i>  
女新闻播报员 4: 伊朗立即对企图破坏他们核计划实施的美国和以色列进行了谴责。

22

00:02:16,836 --> 00:02:19,471

Mahmoud ahmadinejad:

23

00:02:26,580 --> 00:02:32,317

I want to categorically deny  
any United States involvement

24

00:02:32,319 --> 00:02:37,256

in any kind of act of violence  
inside Iran.  
马哈茂德·艾哈迈迪·内贾德: 我坚决反对美国以任何形式对伊朗境内所实施的暴行。

25

00:02:37,258 --> 00:02:40,425

Covert actions can help,

26

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00:02:40,427 --> 00:02:42,427

can assist.

秘密行动能够给与他们支持与帮助。

27

00:02:43,696 --> 00:02:46,598

They are needed, they are not  
all the time essential,

他们需要这样的帮助，但这并不是至关重要的。

28

00:02:46,833 --> 00:02:51,270

and they, in no way,  
can replace political wisdom.

他们绝对没有办法来战胜我们的政治智慧。

29

00:02:51,638 --> 00:02:53,872

Alex gibney:

Were the assassinations in Iran

30

00:02:53,874 --> 00:02:56,275

related to

the stuxnet computer attacks?

亚历克斯·吉布尼：伊朗的暗杀行动与计算机震网蠕虫攻击是否有关？

31

00:02:57,443 --> 00:02:59,278

Uh, next question, please.

嗯，请问下一个问题。

32

00:03:00,880 --> 00:03:02,447

Male newsreader:

*Iran's infrastructure*

33

00:03:02,449 --> 00:03:03,549

*is being targeted*

34

00:03:03,551 --> 00:03:06,718

*by a new and dangerously*

---

<i> powerful cyber worm.</i>

男新闻播报员：伊朗的基础设施已经被这个新型的、极其危险而强大的网络蠕虫视作了攻击目标。

35

00:03:06,720 --> 00:03:09,354

The so-called stuxnet worm  
is specifically designed,

36

00:03:09,356 --> 00:03:11,690

it seems,  
to infiltrate and sabotage

37

00:03:11,692 --> 00:03:14,826

<i> real-world power plants</i>  
<i> and factories and refineries.</i>

所谓的网络蠕虫病毒是一种被特殊设计，看起来能够潜入和破坏现实世界的发电厂、工厂以及炼油厂的计算机病毒。

38

00:03:14,828 --> 00:03:16,228

Male newsreader 2:<i> It's not</i>  
<i> trying to steal information</i>

39

00:03:16,230 --> 00:03:17,396

<i> or grab your credit card,</i>

男新闻播报员：它不会去试图盗取你的个人信息或者信用卡。

40

00:03:17,398 --> 00:03:20,199

<i> they're trying to get into</i>  
<i> some sort of industrial plant</i>

41

00:03:20,201 --> 00:03:22,801

<i> and wreak havoc trying</i>  
<i> to blow up an engine or...</i>

它会试图潜入某类工业厂房，通过炸毁引擎或其他关键性设备从而造成严重破坏。

42

00:03:22,803 --> 00:03:25,370

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Male newsreader 3:

男新闻播报员 3:

43

00:03:39,052 --> 00:03:40,152

Male newsreader 4:

<i> No one knows</i>

00:03:40,154 --> 00:03:41,320

<i> who's behind the worm</i>

45

00:03:41,322 --> 00:03:42,988

<i> and the exact nature</i>

<i> of its mission,</i>

男新闻播报员 4: 没有人知道是谁躲藏在蠕虫病毒背后, 也没有人知道该蠕虫病毒的真正使命。

46

00:03:42,990 --> 00:03:45,857

<i> but there are fears Iran</i>

<i> will hold Israel</i>

47

00:03:45,859 --> 00:03:49,228

<i> or America responsible</i>

<i> and seek retaliation.</i>

但也有人担心伊朗将以此抓住以色列或美国的责任不放, 进而采取报复措施。

48

00:03:49,230 --> 00:03:50,329

Male newsreader 5:

<i> It's not impossible that</i>

49

00:03:50,331 --> 00:03:51,663

<i> some group of hackers did it,</i>

男新闻播报员 5: 这不可能是黑客组织做的。

50

00:03:51,665 --> 00:03:53,732

<i> but the security experts</i>

<i> that are studying this</i>

51

00:03:53,734 --&gt; 00:03:56,501

*<i> really think this required</i>**<i>the resource of a nation-state.</i>*

正在研究震网的安全专家们却坚信这需要整合国家资源才能实现。

52

00:04:02,442 --&gt; 00:04:04,376

Man: Okay, and spinning.

男子：好的，请继续吧。

53

00:04:04,378 --&gt; 00:04:05,844

Gibney: Okay, good.

Here we go.

吉布尼：好的，我们开始吧。

54

00:04:07,080 --&gt; 00:04:10,382

What impact, ultimately,  
did the stuxnet attack have?

55

00:04:10,384 --&gt; 00:04:11,650

Can you say?

您能否讲一讲，震网攻击从根本上会造成什么样的影响？

56

00:04:12,452 --&gt; 00:04:14,620

I don't want to

get into the details.

我不想讲那些细节。

57

00:04:14,854 --&gt; 00:04:17,356

Gibney: Since the event  
has already happened,

58

00:04:17,358 --&gt; 00:04:21,059

why can't we talk more openly  
and publicly about stuxnet?

吉布尼：自从这件事情发生后，我们为什么不能更公开地谈论震网呢？

59

00:04:21,061 --&gt; 00:04:23,962

Yeah, I mean, my answer

is because it's classified.

是的，我理解您的意思，我的回答是因为这件事属于机密。

60

00:04:24,430 --&gt; 00:04:27,532

I... I won't knowledge...

You know, knowingly

61

00:04:27,534 --&gt; 00:04:29,635

offer up anything

i consider classified.

我.....我不知道.....

你知道，故意提供任何我认为是机密的东西意味着什么。

62

00:04:29,637 --&gt; 00:04:31,870

Gibney: I know that you

can't talk much about stuxnet,

吉布尼：我知道你不能过多谈论震网，

63

00:04:31,872 --&gt; 00:04:35,274

because stuxnet

is officially classified.

因为从官方上讲震网是属于涉密的。

64

00:04:35,276 --&gt; 00:04:36,642

You're right on

both those counts.

在这两方面你说的是对的。

65

00:04:37,110 --&gt; 00:04:38,443

Gibney:

But there has been

66

00:04:38,445 --&gt; 00:04:40,545

a lot reported

about it in the press.

吉布尼：但是在新闻界已经出现了很多关于震网的报道。

67

00:04:40,547 --> 00:04:42,781

I don't want

to comment on this.

我不想评论这个。

68

00:04:42,783 --> 00:04:47,052

I read it in the newspaper,

the media, like you,

我和你一样，通过报纸、媒体了解了它。

69

00:04:47,054 --> 00:04:50,055

but I'm unable

to elaborate upon it.

但是我不能详细的对它进行描述。

70

00:04:50,290 --> 00:04:52,457

People might find it frustrating

71

00:04:52,459 --> 00:04:54,993

not to be able to talk about it

when it's in the public domain,

人们也许会发现，在公众场合不能谈论震网这件事是很令人很沮丧的。

72

00:04:54,995 --> 00:04:56,395

but...

但是...

73

00:04:56,397 --> 00:04:57,896

Gibney:

I find it frustrating.

吉布尼：是的，这的确是令人沮丧的。

74

00:04:57,898 --> 00:04:59,398

Yeah, I'm sure you do.  
是的，我相信你也是。

75

00:04:59,400 --> 00:05:00,966

I don't answer that question.  
我不会回答这个问题的。

76

00:05:00,968 --> 00:05:02,334

Unfortunately,  
i can't comment.  
可惜的是，我不能评论它。

77

00:05:02,336 --> 00:05:03,969

I do not know  
how to answer that.  
我也不知道该如何回答这个问题。

78

00:05:03,971 --> 00:05:06,138

Two answers before you even  
get started, I don't know,  
实际上在你开始提出之前的两个问题时，我就已经不知道如何回答了。

79

00:05:06,140 --> 00:05:08,940

and if I did, we wouldn't talk  
about it anyway.  
如果我知道，我们也绝不会谈论它。

80

00:05:08,942 --> 00:05:10,776

Gibney: How can you have  
a debate if everything's secret?  
吉布尼：如果每件事都是秘密的话，你又如何进行讨论呢？

81

00:05:10,778 --> 00:05:12,811

I think right now  
that's just where we are.  
我现在在想，这正是我们所关注的重点。

---

82

00:05:13,112 --&gt; 00:05:14,579

No one wants to...

没有人想...

83

00:05:14,581 --&gt; 00:05:16,982

Countries aren't happy

about confessing

84

00:05:16,984 --&gt; 00:05:19,785

or owning up to what they did

because they're not quite sure

85

00:05:19,787 --&gt; 00:05:21,653

where they want

the system to go.

政府首脑们是不愿承认或是忏悔其所做过的事情的。因为他们也不是很确定其自身想让国家体系朝着哪个方向发展。

86

00:05:22,288 --&gt; 00:05:24,256

&lt;i&gt; And so whoever&lt;/i&gt;

&lt;i&gt; was behind stuxnet&lt;/i&gt;

87

00:05:24,258 --&gt; 00:05:25,757

&lt;i&gt; hasn't admitted&lt;/i&gt;

&lt;i&gt; they were behind it.&lt;/i&gt;

所以，无论是谁躲在震网背后来操纵这一切，他都不会承认。

88

00:05:29,595 --&gt; 00:05:31,463

Gibney:

&lt;i&gt; Asking officials about stuxnet&lt;/i&gt;

89

00:05:31,465 --&gt; 00:05:32,998

&lt;i&gt; was frustrating and surreal.&lt;/i&gt;

吉布尼：向政府官员询问关于震网病毒的结果必定是令人沮丧的和不现实的。

90

00:05:33,299 --> 00:05:35,834

<i> like asking the emperor</i>

<i> about his new clothes.</i>

这也正如询问皇帝的新衣如何一样。

91

00:05:36,536 --> 00:05:39,638

<i> Even after the cyber weapon</i>

<i> had penetrated computers</i>

92

00:05:39,640 --> 00:05:41,039

<i> all over the world,</i>

93

00:05:41,307 --> 00:05:43,608

<i> no one was willing</i>

<i> to admit it was loose</i>

94

00:05:43,610 --> 00:05:46,011

<i> or talk about</i>

<i> the dangers it posed.</i>

即使是在网络武器已经渗透进世界各地的电脑之后,也没有人愿意承认对它的管理是放任的或者谈论其所带来的危险。

95

00:05:46,879 --> 00:05:49,147

<i> What was it about</i>

<i> the stuxnet operation</i>

96

00:05:49,149 --> 00:05:50,949

<i>that was hiding in plain sight?</i>

震网的操作系统是什么样的? 使得其就这样隐藏在众目睽睽之下得以执行?

97

00:05:52,385 --> 00:05:54,152

<i> Maybe there was a way</i>

<i> the computer code</i>

98

00:05:54,154 --> 00:05:55,787

<i> could speak for itself.</i>

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也许有一种方式可以说明这种计算机代码。

99

00:05:56,556 --> 00:05:58,924

<i> Stuxnet first surfaced</i>

<i> in Belarus.</i>

震网首次出现是在白俄罗斯。

100

00:05:59,492 --> 00:06:01,860

<i> I started with a call</i>

<i> to the man who discovered it</i>

101

00:06:01,862 --> 00:06:04,863

<i> when his clients in Iran</i>

<i> began to panic</i>

102

00:06:04,865 --> 00:06:07,532

<i> over an epidemic</i>

<i> of computer shutdowns.</i>

当这位伊朗的用户因发现该病毒对电脑自动关机而感到恐慌的时候，我开始与这名病毒发现者进行通话。

103

00:06:08,334 --> 00:06:11,570

Had you ever seen anything  
quite so sophisticated before?

你之前见过如此复杂的事情么？

104

00:07:34,987 --> 00:07:36,822

Eric chien:

<i> On a daily basis, basically</i>

105

00:07:36,824 --> 00:07:38,890

<i> we are sifting through</i>

106

00:07:38,892 --> 00:07:42,394

<i> a massive haystack looking for</i>

<i> that proverbial needle.</i>

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埃里克 基恩：在日常生活中，基本上我们每天都在做大海捞针的事。

107

00:07:43,262 --> 00:07:46,231

We get millions of pieces  
of new malicious threats

108

00:07:46,233 --> 00:07:48,099

and there are millions of  
attacks going on

109

00:07:48,101 --> 00:07:49,301

every single day.

每一天，我们都会遭遇数以百万的新的恶意威胁和攻击。

110

00:07:49,469 --> 00:07:51,903

And only way are trying to  
protect people

111

00:07:51,905 --> 00:07:53,505

and their computers and...  
And their systems

112

00:07:53,507 --> 00:07:56,174

and countries' infrastructure

113

00:07:56,176 --> 00:07:58,276

from being taken down  
by those attacks.

然而我们唯一能做的就是努力去保护用户以及他们的电脑、他们的操作系统以及国家的基础设施不被这些攻击摧毁。

114

00:07:58,278 --> 00:08:01,613

But more importantly, we have  
to find the attacks that matter.

而更为重要的是，我们必须找出引起这一事件的攻击行为。

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115

00:08:01,615 --&gt; 00:08:03,348

When you're talking about  
that many,

116

00:08:03,649 --&gt; 00:08:05,917

impact is extremely important.

当你们讨论很多问题的時候，其产生的影响才是极为重要的。

117

00:08:18,297 --&gt; 00:08:19,998

Eugene kaspersky:<i> Twenty years</i>  
<i> ago, the antivirus companies,</i>

118

00:08:20,000 --&gt; 00:08:21,700

they were hunting  
for computer viruses

119

00:08:21,702 --&gt; 00:08:22,968

because there were not so many.

尤金·卡斯基：二十年前，我们的杀毒软件公司就已经开始查找计算机病毒了。因为当时的计算机病毒还没有那么多。

120

00:08:22,970 --&gt; 00:08:26,271

So we had, like,  
tens of dozens a month,

121

00:08:26,472 --&gt; 00:08:29,040

and there was just  
little numbers.

所以我们一个月可以捕获到数十个，这在当时只是小的数量。

122

00:08:29,042 --&gt; 00:08:33,245

Now, we collect millions  
of unique attacks every month.

而如今，我们每个月可以收集到数百万独一无二的攻击样本。

123

00:08:34,614 --> 00:08:37,048

Vitaly kamluk:<i> This room we call</i>  
<i> a woodpecker's room</i>

124

00:08:37,050 --> 00:08:38,383

<i> or a virus lab,</i>

维塔利.汉克：我们称这间屋子为“啄木鸟之屋”或者“病毒实验室”。

125

00:08:38,618 --> 00:08:40,552

and this is where

<i> virus analysts sit.</i>

这也是病毒分析师们所在的地方。

126

00:08:40,554 --> 00:08:42,521

<i> We call them woodpeckers</i>

<i> because they are</i>

127

00:08:42,523 --> 00:08:45,023

<i> pecking the worms,</i>

<i> network worms, and viruses.</i>

我们之所以称他们为“啄木鸟”是因为他们“啄食”虫子——蠕虫和病毒。

128

00:08:45,892 --> 00:08:49,127

<i> And we see, like, three</i>

<i> different groups of hackers</i>

129

00:08:49,129 --> 00:08:50,695

behind cyber-attacks.

而现在正如我们所见，网络攻击的背后存在三个不同的黑客群体。

130

00:08:51,464 --> 00:08:53,231

They are traditional

cyber criminals.

他们是传统的网络犯罪者。

131

00:08:53,399 --> 00:08:57,235

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Those guys are interested  
only in illegal profit.

132

00:08:57,237 --&gt; 00:08:58,637

And quick and dirty money.

那些家伙只关心非法牟利、以及如何能快速得到那些肮脏的钱。

133

00:08:58,639 --&gt; 00:09:00,805

<i> Activists, or hacktivists,</i>

134

00:09:00,807 --&gt; 00:09:03,174

<i> they are hacking for fun</i>

<i> or hacking to push</i>

135

00:09:03,176 --&gt; 00:09:04,442

<i> some political message.</i>

那些活跃分子或者黑客组织,通过黑客行动来寻求刺激或通过黑客行为来散布一些政治信息。

136

00:09:04,677 --&gt; 00:09:07,045

<i> And the third group</i>

<i> is nation-states.</i>

而第三种黑客群体就是国家组织。

137

00:09:07,246 --&gt; 00:09:10,148

<i> They're interested in</i>

<i> high-quality intelligence</i>

138

00:09:10,150 --&gt; 00:09:11,583

<i> or sabotage activity.</i>

他们对高水准的情报工作或者破坏活动感兴趣。

139

00:09:12,852 --&gt; 00:09:15,353

Chien:<i> Security companies</i>

<i> not only share information</i>

140

00:09:15,355 --> 00:09:17,088

<i> but we also share</i>

<i> binary samples.</i>

简：安全公司之间不仅共享信息，而且也共享二进制样本。

141

00:09:17,090 --> 00:09:18,690

<i> So when</i>

<i> this threat was found</i>

142

00:09:18,692 --> 00:09:20,525

<i> by a Belarusian</i>

<i> security company</i>

143

00:09:20,527 --> 00:09:22,861

<i> on one of their customer's</i>

<i> machines in Iran,</i>

144

00:09:22,863 --> 00:09:25,463

<i> the sample was shared amongst</i>

<i> the security community.</i>

所以当白俄罗斯这家安全公司在他们的伊朗用户电脑上发现这个威胁时，这个样本就已经在安全圈里被共享了。

145

00:09:26,365 --> 00:09:27,933

When we try to name threats,  
we just try to pick

146

00:09:27,935 --> 00:09:30,001

some sort of string,  
some sort of words,

147

00:09:30,003 --> 00:09:32,571

<i> that are inside</i>

<i> of the binary.</i>

当我们试图给这些威胁命名时，我们只是尽量去挑选该二进制中的某些字符串和代码。

148

---

00:09:33,739 --> 00:09:36,107

<i> In this case, there was</i>  
<i> a couple of words in there</i>

149

00:09:36,109 --> 00:09:39,077

<i> and we took pieces of each,</i>  
<i> and that formed stuxnet.</i>

正是基于这种原因，每两句代码，我们便提取一个代码，然后再组合形成震网。

150

00:09:41,547 --> 00:09:44,749

I got the news about stuxnet  
from one of my engineers.  
我是从我的一个工程师那里得到的有关震网的消息。

151

00:09:44,751 --> 00:09:47,452

He came to my office,  
opened the door,

152

00:09:48,020 --> 00:09:51,022

and he said, "so, Eugene,  
of course you know that

153

00:09:51,024 --> 00:09:53,625

we are waiting  
for something really bad.

154

00:09:53,926 --> 00:09:55,093

It happened."

他来到我的办公室，然后推开门，他说：“尤金，我想你一定知道，我们接下来面临的情况有多糟糕。它爆发了。”

155

00:10:01,801 --> 00:10:03,969

Gibney:<i> Give me some</i>  
<i> sense of what it was like</i>

156

00:10:03,971 --> 00:10:05,370

in the lab at that time.

---

吉布尼：告诉我当时你在实验室里是什么感觉。

157

00:10:05,372 --> 00:10:06,972

Was there a palpable  
sense of amazement

158

00:10:06,974 --> 00:10:08,974

that you had something  
really different there?

当你真遇到一些真正与众不同的事情时，你会明显的感觉到诧异么？

159

00:10:09,275 --> 00:10:11,276

Well, I wouldn't call it  
amazement.

恩，我不会觉得那很诧异。

160

00:10:11,278 --> 00:10:13,345

It was a kind of a shock.  
那是一种震惊。

161

00:10:13,746 --> 00:10:16,881

It went beyond our worst fears,  
our worst nightmares,

162

00:10:17,249 --> 00:10:20,251

and this continued  
the more we analyzed.

这已经超出了我们的心理承受能力，对于我们来说这是最糟糕的噩梦。据我们分析，这一噩梦还将持续更久。

163

00:10:20,253 --> 00:10:22,220

The more we researched,

164

00:10:22,222 --> 00:10:25,223

the more bizarre  
the whole story got.

---

随着我们研究的深入，我们发现整件事情存在越来越多匪夷所思的地方。

165

00:10:25,558 --> 00:10:27,225

We look at so much malware  
every day that

166

00:10:27,227 --> 00:10:29,160

we can just look at the code  
and straightaway we can say,  
我们每天看到那么多的恶意软件，以至于我们看一下代码就会脱口而出：

167

00:10:29,162 --> 00:10:30,762

"okay, there's something bad  
going on here,

168

00:10:30,764 --> 00:10:32,230

and I need to  
investigate that."  
“好吧，有一些糟糕的情况出现了，我需要进行调查”。

169

00:10:32,232 --> 00:10:33,298

And that's the way it was

170

00:10:33,499 --> 00:10:35,433

when we looked at stuxnet  
for the first time.  
我们就是用这样的方式首次发现的震网。

171

00:10:35,435 --> 00:10:37,936

We opened it up and there was  
just bad things everywhere.  
我们打开了潘多拉盒子，发现糟糕的情况到处都是。

172

00:10:37,938 --> 00:10:40,405

Just like, okay, this is bad  
and that's bad,

---

就像这样，好的，这是糟糕的，这也是糟糕的。

173

00:10:40,407 --> 00:10:41,940

and, you know,

we need to investigate this.

正如你所知道的那样，我们需要进行调查。

174

00:10:41,942 --> 00:10:43,408

And just suddenly

we had, like,

175

00:10:43,410 --> 00:10:44,876

a hundred questions

straightaway.

就在那时，突然间我们就遇到了数百个显而易见的问题。

176

00:10:46,912 --> 00:10:49,347

<i> The most interesting thing</i>

<i> that we do is detective work</i>

177

00:10:49,349 --> 00:10:52,017

<i> where we try to track down</i>

<i> who's behind a threat,</i>

178

00:10:52,019 --> 00:10:53,585

<i> what are they doing,</i>

<i> what's their motivation,</i>

179

00:10:53,587 --> 00:10:55,320

<i> and try to really stop it</i>

<i> at the root.</i>

我们所做的最有趣的事情就是侦探工作，去追捕威胁的幕后黑手，去探寻他们在做什么，去知晓他们的动机是什么，进而在根本上中止它。

180

00:10:55,322 --> 00:10:57,689

<i> And it is kind of</i>

---

<i> all-consuming.</i>

这是一种想要吞噬一切的东西。

181

00:10:57,691 --> 00:10:59,324

<i> You get this new puzzle</i>

182

00:10:59,326 --> 00:11:01,026

<i> and it's very </i>

<i> to put it down,</i>

183

00:11:01,028 --> 00:11:03,461

<i> you know, work until, like,</i>

<i> 4:00 am in the morning</i>

184

00:11:03,463 --> 00:11:04,663

<i> and figure these things out.</i>

你所遇到的这个新难题真的很难，想要解决它真的的确非常困难，你看，直到早上4点，还在努力解决这些事而工作。

185

00:11:04,665 --> 00:11:07,465

<i> And I was in that zone where</i>

<i> I was very consumed by this,</i>

186

00:11:07,467 --> 00:11:09,601

<i> very excited about it,</i>

<i> very interested to know</i>

187

00:11:09,603 --> 00:11:10,869

<i> what was happening.</i>

我非常痴迷于我所处的领域，并且非常兴奋的想知道到底发生了什么。

188

00:11:10,871 --> 00:11:14,005

<i> And Eric was also</i>

<i> in that same sort of zone.</i>

而且处于同一领域的埃里克也与我一样。

189

00:11:14,007 --&gt; 00:11:16,708

*So the two of us were, like,**back and forth all the time.*

所以我们两个总是这样你来我往。

190

00:11:16,710 --&gt; 00:11:19,444

Chien:*Liam and I continued**to grind at the code,*

191

00:11:19,446 --&gt; 00:11:21,546

*sharing pieces,**comparing notes,*

192

00:11:21,548 --&gt; 00:11:23,381

*bouncing ideas**off of each other.*

简：利亚姆则和我继续钻研代码、分享成果、交换意见，彼此思维交相呼应。

193

00:11:23,816 --&gt; 00:11:25,283

*We realized that**we needed to do*

194

00:11:25,285 --&gt; 00:11:28,353

*what we called deep analysis,**pick apart the threat,*

195

00:11:28,355 --&gt; 00:11:31,189

*every single byte,**every single zero, one,*

196

00:11:31,191 --&gt; 00:11:33,291

*and understand everything**that was inside of it.*

我们意识到我们所需要做的是深度分析，即把该威胁分解成单独的字节，单独的0和1，进而获悉隐藏在其中的每一个细节。

197

00:11:33,826 --> 00:11:35,627

<i> And just to give you</i>

<i> some context,</i>

198

00:11:35,629 --> 00:11:37,662

we can go through and understand  
every line of code

199

00:11:37,664 --> 00:11:39,464

for the average threat  
in minutes.

给你一些建议，对于普通的威胁，我们能够在几分钟内对每行代码进行验证和获悉。

200

00:11:40,066 --> 00:11:41,866

And here we are  
one month into this threat

201

00:11:41,868 --> 00:11:43,802

and we were just starting  
to discover what we call

202

00:11:43,804 --> 00:11:45,704

the payload  
or its whole purpose.

然而对于震网,我们用了一个月的时间来研究它,才仅仅发现其所谓的有效载荷和整体目的。

203

00:11:48,040 --> 00:11:49,574

<i> When looking at</i>  
<i> the stuxnet code,</i>

204

00:11:49,576 --> 00:11:52,143

<i> it's 20 times the size</i>  
<i> of the average piece of code</i>

205

00:11:52,645 --> 00:11:54,879

---

<i> but contains almost</i>

<i> no bugs inside of it.</i>

我们所看到的震网蠕虫代码，它的长度是普通一段代码的 20 倍，而且其内容是几乎没有漏洞的。

206

00:11:54,881 --> 00:11:56,748

<i> And that's extremely rare.</i>

这是极其罕见的。

207

00:11:56,750 --> 00:11:58,650

<i> Malicious code always has</i>

<i> bugs inside of it.</i>

恶意代码总是会存在一些漏洞。

208

00:11:58,652 --> 00:12:00,418

<i> This wasn't the case</i>

<i> with stuxnet.</i>

然而，震网却不是这样。

209

00:12:00,420 --> 00:12:03,254

<i> It's dense and every piece</i>

<i> of code does something</i>

210

00:12:03,256 --> 00:12:06,091

<i> and does something right</i>

<i> in order to conduct its attack.</i>

其代码是密集编写的，每一个代码具体用来做什么都是有利于其攻击行为的。

211

00:12:07,326 --> 00:12:09,394

<i> One of the things that</i>

<i> surprised us</i>

212

00:12:09,396 --> 00:12:11,763

<i> was that stuxnet</i>

<i> utilized what's called</i>

213

---

00:12:11,765 --> 00:12:14,332

a zero-day exploit,  
or basically,

214

00:12:14,334 --> 00:12:16,668

a piece of code  
that allows it to spread

215

00:12:16,670 --> 00:12:18,503

without you having  
to do anything.

而令我们惊讶的是震网蠕虫病毒利用了我们所谓的零日漏洞。或者从根本上来讲，即使你不做任何事该病毒也会扩散。

216

00:12:18,505 --> 00:12:21,239

You don't have to, for example,  
download a file and run it.

举个例子来说,你不需要下载一个文件并运行它。

217

00:12:21,241 --> 00:12:23,441

A zero-day exploit  
is an exploit that

218

00:12:23,443 --> 00:12:25,110

nobody knows about  
except the attacker.

“零日攻击”就是除了攻击者没有人知道的攻击。

219

00:12:25,112 --> 00:12:26,678

So there's no protection  
against it.

所以就不存在有效的防护措施来应对它。

220

00:12:26,680 --> 00:12:28,113

There's been  
no patch released.  
也没有补丁发布。

---

221

00:12:28,115 --&gt; 00:12:30,415

There's been zero days  
protection,

222

00:12:30,417 --&gt; 00:12:32,016

you know, against it.  
目前存在零日防护，正如你所知道的那样，抵制它。

223

00:12:32,885 --&gt; 00:12:34,285

*That's what attackers value,*

224

00:12:34,287 --&gt; 00:12:36,087

*because they know 100 percent*

225

00:12:36,089 --&gt; 00:12:38,423

*if they have*  
*this zero-day exploit,*

226

00:12:38,425 --&gt; 00:12:40,125

*they can get in*  
*wherever they want.*

227

00:12:40,127 --&gt; 00:12:41,626

*They're actually*  
*very valuable.*  
这对于攻击者有好处,如果他们拥有零日攻击程序,那么他们就百分之百知道他们可以侵入到任何他们想侵入的地方。实际上,这对于他们是非常有价值的。

228

00:12:41,628 --&gt; 00:12:43,027

*You can sell these*  
*on the underground*

229

00:12:43,029 --&gt; 00:12:44,529

*for hundreds*

---

<i> of thousands of dollars.</i>

他们能够通过地下交易来售卖这些信息，从而可获得成百上千美元的利润。

230

00:12:45,898 --> 00:12:46,965

Chien:

<i> Then we became more worried</i>

231

00:12:46,967 --> 00:12:49,033

<i> because immediately we</i>

<i> discovered more zero days.</i>

简:然后因为我们马上就发现了更多的零日漏洞，所以就变得更加担心。

232

00:12:49,035 --> 00:12:51,770

And again, these zero days  
are extremely rare.

再次发现这么多零日漏洞是及其罕见的。

233

00:12:51,772 --> 00:12:54,072

Inside stuxnet we had,  
you know, four zero days,

234

00:12:54,074 --> 00:12:55,807

and for the entire rest  
of the year,

235

00:12:55,809 --> 00:12:58,376

we only saw  
12 zero days used.

正如你所知道的，在我们所掌握的震网病毒中有四个零日漏洞在今年全都没有发作。我们只发现了之前使用过的 12 个零日漏洞。

236

00:12:58,378 --> 00:13:00,044

It blows all... everything else  
out of the water.

它打击所有的一切，所有事情都浮出水面。

237

---

00:13:00,046 --> 00:13:01,279

We've never seen this before.  
我们在这之前从未见过这样。

238

00:13:01,281 --> 00:13:02,814

Actually, we've never seen it  
since, either.  
实际上,我们同样也从未见过它。

239

00:13:03,115 --> 00:13:05,717

Seeing one in a malware  
you could understand

240

00:13:05,719 --> 00:13:08,620

because, you know, the malware  
authors are making money,

241

00:13:08,622 --> 00:13:10,221

they're stealing people's credit  
cards and making money,

在恶意软件中发现一个漏洞是可以理解的。因为恶意软件开发者的目的就是赚钱。而他们正通过盗用人们的信用卡来赚钱。

242

00:13:10,223 --> 00:13:11,389

so it's worth their while  
to use it,  
所以这是值得使用的,

243

00:13:11,391 --> 00:13:13,758

but seeing four zero days,  
could be worth

244

00:13:13,760 --> 00:13:14,959

half a million dollars  
right there,

245

---

00:13:14,961 --> 00:13:16,728

used in one piece  
of malware,

246

00:13:16,996 --> 00:13:19,397

this is not your ordinary  
criminal gangs doing this.

在一个恶意软件中发现的四个零日漏洞，可能就价值五十万美元，这不是普通的犯罪团伙所实施的。

247

00:13:19,399 --> 00:13:20,999

This is...

This is someone bigger.

这是.....

这是些更加强大的.....

248

00:13:21,001 --> 00:13:22,901

It's definitely

not traditional crime,

这绝不是传统的犯罪，

249

00:13:22,903 --> 00:13:26,404

not hacktivists.

Who else?

也不是不是黑客组织。

还有谁?

250

00:13:27,273 --> 00:13:29,507

It was evident

on a very early stage

251

00:13:30,009 --> 00:13:32,243

that just given

the sophistication

252

00:13:32,245 --> 00:13:33,745

of this malware...

---

显而易见的，在早期的阶段，我们只考虑了这个恶意软件的复杂性.....

253

00:13:34,980 --> 00:13:37,782

Suggested that  
there must have been

254

00:13:37,784 --> 00:13:39,250

a nation-state involved,

255

00:13:39,252 --> 00:13:42,487

at least one nation-state  
involved in the development.

这表明一定有主权国家参与其中，至少有一个主权国家参与其开发。

256

00:13:42,489 --> 00:13:44,522

When we look at code  
that's coming from

257

00:13:44,524 --> 00:13:46,090

what appears to be  
a state attacker

258

00:13:46,092 --> 00:13:48,693

or state-sponsored attacker,  
usually they're scrubbed clean.

当我们看代码来自何处时，发现这些代码似乎是来自于同一个国家的攻击者或国家资助的攻击者。通常他们会把自己的嫌疑彻底撇清。

259

00:13:48,695 --> 00:13:51,129

They don't... they don't leave  
little bits behind.  
他们不会.....他们不会留下任何蛛丝马迹。

260

00:13:51,131 --> 00:13:52,864

They don't leave  
little hints behind.  
他们也没有留下任何蛛丝马迹。

261

00:13:53,132 --&gt; 00:13:54,799

*But in stuxnet**there were actually*

262

00:13:54,801 --&gt; 00:13:56,167

*a few hints left behind.*

但实际上，震网蠕虫病毒中的确留有一些蛛丝马迹。

263

00:13:57,436 --&gt; 00:14:00,705

*One was that, in order to**get low-level access*

264

00:14:00,707 --&gt; 00:14:02,173

*to Microsoft windows,*

265

00:14:02,374 --&gt; 00:14:03,942

*stuxnet needed to use**a digital certificate,*

266

00:14:04,476 --&gt; 00:14:06,878

*which certifies that**this piece of code*

267

00:14:06,880 --&gt; 00:14:09,747

*came from**a particular company.*

其中一个便是为了获得低层访问微软操作系统的权限，震网需要使用数字证书，该证书可以证实这段代码来自于特定的公司。

268

00:14:10,649 --&gt; 00:14:12,717

Now, those attackers obviously  
couldn't go to Microsoft

269

00:14:12,719 --&gt; 00:14:14,185

and say,  
"hey, test our code out for us.

270

00:14:14,187 --> 00:14:15,787

And give us  
a digital certificate."

现在，这些攻击者显然不会去对微软说：“嗨，为我们检测代码，并给我们一个数字证书”。

271

00:14:16,488 --> 00:14:18,089

So they essentially  
stole them...

272

00:14:19,325 --> 00:14:21,392

<i> From two companies</i>  
<i> in Taiwan.</i>

所以，实际上这是他们是从台湾的两家公司偷来的数字证书.....

273

00:14:21,394 --> 00:14:23,294

<i> And these two companies have</i>  
<i> nothing to do with each other</i>

274

00:14:23,296 --> 00:14:24,963

<i> except for</i>  
<i> their close proximity</i>

275

00:14:24,965 --> 00:14:26,764

<i> in the exact same</i>  
<i> business park.</i>

这两家公司除了位于同一个创业园外，彼此并无关联。

276

00:14:29,335 --> 00:14:33,171

<i> Digital certificates</i>  
<i> are guarded very, very closely</i>

277

00:14:33,173 --> 00:14:34,706

<i> behind multiple doors</i>

---

278

00:14:34,708 --&gt; 00:14:37,141

&lt;i&gt; and they require multiple&lt;/i&gt;

&lt;i&gt; people to unlock.&lt;/i&gt;

数字证书是非常机密的、而且有多层防护，需要多人解锁。

279

00:14:37,143 --&gt; 00:14:38,810

Security:&lt;i&gt; ...To the camera.&lt;/i&gt;

安全专家:.....大家来看这个相机。

280

00:14:38,812 --&gt; 00:14:40,511

Chien:&lt;i&gt; And they need to provide&lt;/i&gt;

&lt;i&gt; both biometrics&lt;/i&gt;

281

00:14:40,513 --&gt; 00:14:42,914

&lt;i&gt; - and, as well, pass phrases.&lt;/i&gt;

简:他们不但需要通过指纹识别技术还需要通过密码短语。

282

00:14:42,916 --&gt; 00:14:44,382

&lt;i&gt; It wasn't like&lt;/i&gt;

&lt;i&gt; those certificates were&lt;/i&gt;

283

00:14:44,384 --&gt; 00:14:46,084

&lt;i&gt; just sitting on some machine&lt;/i&gt;

&lt;i&gt; connected to the Internet.&lt;/i&gt;

它不像这些只是坐在一些机器前操作就能连接到互联网的证书一样。

284

00:14:46,318 --&gt; 00:14:49,120

&lt;i&gt; Some human assets&lt;/i&gt;

&lt;i&gt; had to be involved, spies.&lt;/i&gt;

人力资源必须参与其中，例如间谍。

285

00:14:49,355 --&gt; 00:14:51,189

O'murchu:&lt;i&gt; Like a cleaner who&lt;/i&gt;

&lt;i&gt; comes in at night&lt;/i&gt;

286

00:14:51,191 --&gt; 00:14:52,924

*<i> and has stolen</i>**<i> these certificates</i>*

287

00:14:52,926 --&gt; 00:14:54,158

*<i> from these companies.</i>*

奥·莫楚：假扮成清洁工在晚上进入这些公司，偷取这些证书。

288

00:14:57,563 --&gt; 00:14:59,664

It did feel like walking

onto the set

289

00:14:59,666 --&gt; 00:15:02,166

of this James Bond movie

and you...

那种感觉就像你走进了詹姆斯·邦德的电影.....

290

00:15:02,168 --&gt; 00:15:03,735

You've been embroiled

in this thing that,

291

00:15:03,737 --&gt; 00:15:06,337

you know, you...

You never expected.

你被卷入其中，

你知道，你.....

你从来没有料到。

292

00:15:09,008 --&gt; 00:15:10,108

*<i> We continued to search,</i>*

293

00:15:10,110 --&gt; 00:15:11,609

*<i> and we continued</i>**<i> to search in code,</i>*

294

00:15:11,611 --&gt; 00:15:14,445

<i> and eventually we found some</i>  
<i> other bread crumbs left</i>

295

00:15:14,447 --&gt; 00:15:15,847

<i> we were able to follow.</i>

我们继续搜索，我们继续搜索代码，最终我们发现了一些遗留的线索，这样我们就可以继续跟进下去。

296

00:15:16,548 --&gt; 00:15:18,182

<i> It was doing something</i>

<i> with Siemens,</i>

297

00:15:18,450 --&gt; 00:15:21,252

<i> Siemens software,</i>

<i> possibly Siemens hardware.</i>

与西门子合作，其西门子软件，也可能是西门子硬件。

298

00:15:21,553 --&gt; 00:15:23,254

We'd never ever seen that

in any malware before,

299

00:15:23,256 --&gt; 00:15:24,589

something targeting Siemens.

我们之前从来没有见过任何针对西门子的恶意软件。

300

00:15:24,591 --&gt; 00:15:26,524

We didn't even know why

they would be doing that.

我们甚至不知道为什么他们会这样做。

301

00:15:28,127 --&gt; 00:15:30,862

<i> But after googling,</i>

<i> very quickly we understood</i>

302

00:15:30,864 --&gt; 00:15:33,298

<i> it was targeting</i>

---

<i> Siemens plcs.</i>

但是谷歌搜索之后,我们很快明白这其实就是针对西门子的 PLC (可编程逻辑控制器)。

303

00:15:33,766 --> 00:15:36,701

Stuxnet was targeting  
a very specific hardware device,

304

00:15:36,703 --> 00:15:40,104

something called a plc or  
a programmable logic controller.

震网的目标是一个非常特殊的硬件设备----“可编程控制器”，也可简称为“PLC”。

305

00:15:40,539 --> 00:15:43,441

Langner:<i> The plc is kind of</i>  
<i> a very small computer</i>

306

00:15:43,742 --> 00:15:46,477

attached to physical equipment,

307

00:15:46,479 --> 00:15:49,113

like pumps,  
like valves, like motors.

兰纳: PLC 是一种很小的可连接到电脑的物理设备, 就像泵、阀门、电机一样。

308

00:15:49,915 --> 00:15:54,485

<i> So this little box is</i>  
<i> running a digital program</i>

309

00:15:54,487 --> 00:15:56,788

<i> and the actions</i>  
<i> of this program</i>

310

00:15:56,790 --> 00:16:00,892

<i> turns that motor on, off,</i>  
<i> or sets a specific speed.</i>

所以这个控制器是一个运行中的数字程序,同时其行为可通过引擎开关或是设定一个特定的

速度来调整。

311

00:16:00,894 --> 00:16:02,627

Chien:<i> Those program</i>

<i> module controllers</i>

312

00:16:02,629 --> 00:16:05,163

<i> control things like</i>

<i> power plants, power grids.</i>

简:那些程序模块控制器可以控制诸如电厂、电网等设备。

313

00:16:05,165 --> 00:16:06,898

O'murchu:

<i> This is used in factories,</i>

314

00:16:06,900 --> 00:16:09,367

<i> it's used in</i>

<i> critical infrastructure.</i>

奥·莫楚:它被应用于工厂等关键性基础设施中。

315

00:16:10,069 --> 00:16:13,104

Critical infrastructure,

it's everywhere around us,

316

00:16:13,106 --> 00:16:15,673

<i> transportation,</i>

<i> telecommunications,</i>

317

00:16:15,675 --> 00:16:17,976

<i> financial services,</i>

<i> health care.</i>

我们周围到处都是关键性基础设施，诸如交通运输、电信、金融服务、卫生保健。

318

00:16:18,510 --> 00:16:21,412

<i> So the payload of stuxnet</i>

<i> was designed</i>

319

00:16:21,414 --> 00:16:24,582

to attack some  
very important part

320

00:16:24,584 --> 00:16:26,017

of our world.

所以震网的有效载荷被设计成为攻击我们这个世界非常重要的组成部分。

321

00:16:26,285 --> 00:16:27,819

The payload is gonna be  
important.

有效载荷是非常重要的。

322

00:16:27,821 --> 00:16:30,588

What happens there could be  
very dangerous.

可能会有非常危险的事情发生。

323

00:16:32,792 --> 00:16:35,760

Langner:<i> The next</i>  
<i> very big surprise came</i>

324

00:16:35,762 --> 00:16:38,062

<i> when it infected</i>  
<i> our lab system.</i>

兰纳:接下来非常令我们吃惊的事是:它感染了我们的实验室系统。

325

00:16:38,797 --> 00:16:41,799

<i> We figured out that</i>  
<i> the malware was probing</i>

326

00:16:41,801 --> 00:16:43,167

<i> for controllers.</i>

我们发现恶意软件正在探测控制器。

327

00:16:43,535 --&gt; 00:16:45,603

*<i> It was quite picky</i>**<i> on its targets.</i>*

震网病毒对它的攻击目标是很挑剔的。

328

00:16:45,605 --&gt; 00:16:49,941

*<i>It didn't try to manipulate any</i>**<i> given controller in a network</i>*

329

00:16:49,943 --&gt; 00:16:51,275

*<i> that it would see.</i>*

它没有试图在网络中操控它所看到的指定控制器。

330

00:16:51,510 --&gt; 00:16:55,713

*<i>It went through several checks,</i>**<i> and when those checks failed,</i>*

331

00:16:55,715 --&gt; 00:16:57,949

*<i> it would not implement</i>**<i> the attack.</i>*

它会通过多次检测来决定。当这些检测显示失败时,它就不会执行攻击。

332

00:17:00,686 --&gt; 00:17:04,555

*<i> It was obviously probing</i>**<i> for a specific target.</i>*

显而易见, 这是为了探测特定的目标。

333

00:17:05,891 --&gt; 00:17:08,059

You've got to put this

in context that,

334

00:17:08,061 --&gt; 00:17:09,861

at the time,

we already knew,

---

335

00:17:09,863 --&gt; 00:17:12,230

well, this is the most  
sophisticated piece of malware

336

00:17:12,232 --&gt; 00:17:13,798

that we have ever seen.

你必须把它放在特定的环境中，与此同时，我们已经了解到，这是我们见过的最复杂的恶意软件。

337

00:17:14,566 --&gt; 00:17:16,534

So it's kind of strange.

所以它有点奇怪。

338

00:17:16,536 --&gt; 00:17:21,539

Somebody takes that huge effort  
to hit one specific target?

有人需要通过巨大的努力来实现其特定的目标吗？

339

00:17:21,807 --&gt; 00:17:23,741

Well, that must be

quite a significant target.

嗯，那一定是个相当重要的目标。

340

00:17:27,346 --&gt; 00:17:29,747

Chien:<i> So at symantec we have</i>

<i> probes on networks</i>

341

00:17:29,749 --&gt; 00:17:30,915

<i> all over the world</i>

342

00:17:30,917 --&gt; 00:17:33,317

<i> watching for</i>

<i> malicious activity.</i>

简:因此在赛门铁克，我们对世界各地的网络布置了探测仪来监测网络恶意活动。

343

00:17:33,719 --> 00:17:35,720

O'murchu:<i> We'd actually seen</i>  
<i> infections of stuxnet</i>

344

00:17:35,722 --> 00:17:38,256

<i> all over the world,</i>  
<i> in the U.S., Australia,</i>

345

00:17:38,258 --> 00:17:40,892

<i> in the u.K., in France,</i>  
<i> Germany, all over Europe.</i>

奥·莫楚:我们真正想看到的是震网病毒在世界各地,如美国、澳大利亚、英国、法国、德国等欧洲各地的感染情况。

346

00:17:41,393 --> 00:17:43,761

Chien:<i> It spread to any windows</i>  
<i> machine in the entire world.</i>  
简:它传播到了全世界每一台 Windows 机器中。

347

00:17:44,163 --> 00:17:46,397

You know,  
we had these organizations

348

00:17:46,399 --> 00:17:48,699

inside the United States  
who were in charge of

349

00:17:48,701 --> 00:17:50,401

<i> industrial control</i>  
<i> facilities saying,</i>  
你知道,我们拥有一些在美国境内负责工业控制设施的组织,

350

00:17:50,403 --> 00:17:52,403

<i> "we're infected.</i>  
<i> What's gonna happen?"</i>  
他们说:“我们正在被感染。接下来将会发生什么事?”

351

00:17:52,771 --&gt; 00:17:55,440

O'murchu:&lt;i&gt; We didn't know if&lt;/i&gt;

&lt;i&gt; there was a deadline coming up&lt;/i&gt;

352

00:17:55,442 --&gt; 00:17:57,008

&lt;i&gt; where this threat&lt;/i&gt;

&lt;i&gt; would trigger&lt;/i&gt;

奥·莫楚:我们不知道这个即将到来的威胁是否有最后期限。

353

00:17:57,010 --&gt; 00:17:59,343

&lt;i&gt; and suddenly would,&lt;/i&gt;

&lt;i&gt; like, turn off all, you know,&lt;/i&gt;

354

00:17:59,345 --&gt; 00:18:00,912

electricity plants

around the world

355

00:18:00,914 --&gt; 00:18:02,680

or it would start

shutting things down

356

00:18:02,682 --&gt; 00:18:04,015

or launching some attack.

假如突然间这个攻击来了，那我们就会关掉世界各地所有的发电厂，否则它将切断所有的资源或发起某些攻击。

357

00:18:04,850 --&gt; 00:18:07,885

&lt;i&gt;We knew that stuxnet could have&lt;/i&gt;

&lt;i&gt; very dire consequences,&lt;/i&gt;

358

00:18:07,887 --&gt; 00:18:10,555

&lt;i&gt; and we were&lt;/i&gt;

&lt;i&gt; very worried about&lt;/i&gt;

359

00:18:10,557 --&gt; 00:18:12,023

<i> what the payload</i>

<i> contained</i>

360

00:18:12,025 --> 00:18:14,258

<i> and there was</i>

<i> an imperative speed</i>

361

00:18:14,260 --> 00:18:16,360

<i> that we had to race</i>

<i> and try and, you know,</i>

362

00:18:16,362 --> 00:18:17,762

<i> beat this ticking bomb.</i>

我们知道，震网病毒可能带来非常可怕的后果，我们也非常担心它所包含的有效载荷所存在的不可预估速度，我们必须与时间赛跑并尽全力打败这个定时炸弹。

363

00:18:18,897 --> 00:18:21,432

<i> Eventually, we were able to</i>

<i> refine the statistics a little</i>

364

00:18:21,434 --> 00:18:22,934

<i> and we saw that</i>

<i> Iran was the number one</i>

365

00:18:22,936 --> 00:18:24,535

<i> infected country in the world.</i>

最终，我们可以一点点地完善统计数据。同时我们可以看到，伊朗是被感染数量最多的一个国家。

366

00:18:24,537 --> 00:18:27,105

Chien:<i> That immediately raised</i>

<i> our eyebrows.</i>

简:这都迫在眉睫了。

367

00:18:27,107 --> 00:18:29,373

We had never

seen a threat before

368

00:18:29,375 --> 00:18:31,509

where it was

predominantly in Iran.

在这之前，我们从未发现主要针对伊朗的威胁。

369

00:18:32,444 --> 00:18:34,045

<i> And so we began to follow</i>

<i> what was going on</i>

370

00:18:34,047 --> 00:18:35,279

<i> in the geopolitical world,</i>

371

00:18:35,447 --> 00:18:37,014

<i> what was happening</i>

<i> in the general news.</i>

因此我们开始注意观察地缘政治的世界中到底发生了什么，日常新闻报道中发生了什么。

372

00:18:37,216 --> 00:18:40,451

<i> And at that time, there were</i>

<i> actually multiple explosions</i>

373

00:18:40,453 --> 00:18:43,354

<i> of gas pipelines</i>

<i> going in and out of Iran.</i>

当时，实际上有多个进出伊朗的天然气管道发生了爆炸。

374

00:18:44,323 --> 00:18:45,723

<i> Unexplained explosions.</i>

爆炸原因不明。

375

00:18:47,259 --> 00:18:49,393

O'murchu:<i> And of course,</i>

<i> we did notice that at the time</i>

376

00:18:49,395 --&gt; 00:18:52,029

*<i> there had been assassinations</i>**<i> of nuclear scientists.</i>*

奥·莫楚：当然，与此同时，我们已经注意到有核科学家被暗杀。

377

00:18:53,232 --&gt; 00:18:54,665

*<i> So that was worrying.</i>*

所以，这是令人担忧的。

378

00:18:55,467 --&gt; 00:18:57,668

*<i> We knew there was</i>**<i> something bad happening.</i>*

我们知道有不好的事情发生。

379

00:18:58,137 --&gt; 00:18:59,971

Gibney: Did you get concerned  
for yourself?

吉布尼：你有没有担心自己？

380

00:18:59,973 --&gt; 00:19:01,906

I mean, did you begin to start  
looking over your shoulder

381

00:19:01,908 --&gt; 00:19:03,141

from time to time?

我的意思是，你是从什么时候开始时不时地小心背后的？

382

00:19:03,143 --&gt; 00:19:04,742

Yeah, definitely

looking over my shoulder

383

00:19:04,744 --&gt; 00:19:07,311

and... and being careful about  
what I spoke about on the phone.

是的，毫无疑问，小心背后.....小心我在电话中所说的话。

384

00:19:08,313 --&gt; 00:19:11,516

I was... pretty confident  
my conversations on my...  
我.....非常确信我的谈话.....

385

00:19:11,518 --&gt; 00:19:12,984

On the phone were  
being listened to.  
在电话中被监听了。

386

00:19:13,318 --&gt; 00:19:15,286

We were only half joking

387

00:19:15,288 --&gt; 00:19:17,321

when we would  
look at each other

388

00:19:17,323 --&gt; 00:19:19,090

and tell each other  
things like,

389

00:19:19,092 --&gt; 00:19:21,325

"look, I'm not suicidal.  
我们看着彼此、面对面交谈，半开玩笑的说：“看，我并没有自杀。  
390

00:19:21,660 --&gt; 00:19:25,163

If I show up dead on Monday,  
you know, it wasn't me."  
如果周一出现了我的死亡消息，你知道，这不是我自己干的。”

391

00:19:33,939 --&gt; 00:19:36,374

<i> We'd been publishing</i>  
<i> information about stuxnet</i>

392

00:19:36,376 --&gt; 00:19:37,775

<i> all through that summer.</i>

---

整个夏天，我们一直在公布震网蠕虫的信息。

393

00:19:39,144 --> 00:19:41,779

<i> And then in November,</i>

<i> the industrial control system</i>

394

00:19:41,781 --> 00:19:44,916

<i> sort of expert</i>

<i> in Holland contacted us...</i>

然后在 11 月份，有荷兰的工业控制系统专家联系我们.....

395

00:19:46,185 --> 00:19:48,786

<i> And he said all of these</i>

<i> devices that would be inside of</i>

396

00:19:48,788 --> 00:19:51,856

<i> an industrial control system</i>

<i> hold a unique identifier number</i>

397

00:19:51,858 --> 00:19:55,059

that identified the make

and model of that device.

他说，所有的处于工业控制系统内的这些设备将持有一个独特的标识号码，通过它可以判定该设备的制造商和型号。

398

00:19:56,828 --> 00:20:00,498

<i> And we actually had a couple</i>

<i> of these numbers in the code</i>

399

00:20:00,500 --> 00:20:01,866

<i> that we didn't know</i>

<i> what they were.</i>

实际上，我们确实掌握了代码中一些数字的连接点，但我们不知道它是做什么的。

400

00:20:02,901 --> 00:20:04,802

And so we realized

---

maybe what he was referring to

401

00:20:04,804 --> 00:20:06,270

was the magic numbers we had.

所以我们意识到，也许他指的是我们已经掌握的神秘数字。

00:20:06,805 --> 00:20:08,339

And then when we searched

for those magic numbers

403

00:20:08,341 --> 00:20:09,507

in that context,

404

00:20:09,509 --> 00:20:11,909

<i> we saw that what</i>

<i> had to be connected</i>

405

00:20:11,911 --> 00:20:14,078

<i> to this industrial control</i>

<i> system that was being targeted</i>

406

00:20:14,080 --> 00:20:16,047

<i> were something called</i>

<i> frequency converters </i>

407

00:20:16,381 --> 00:20:18,549

<i> from two</i>

<i> specific manufacturers ,</i>

408

00:20:18,551 --> 00:20:20,318

<i> one of which was in Iran.</i>

接下来，在这样的背景下，当我们搜索这些神秘数字时，我们发现那些被锁定为目标的工业控制系统正通过所谓的变频器被连接，该变频器来自于两个特定得生产商，其中一个就来自于伊朗。

409

00:20:20,919 --> 00:20:22,687

---

And so at this time,  
we absolutely knew

410

00:20:22,689 --> 00:20:25,022

that the facility  
that was being targeted

411

00:20:25,024 --> 00:20:26,490

had to be in Iran

412

00:20:26,825 --> 00:20:29,660

and had equipment made  
from iranian manufacturers.

所以直到这个时候，我们才完全明白了目标设备一定在伊朗境内，并且该设备由伊朗制造商装配。

413

00:20:30,596 --> 00:20:32,363

When we looked up  
those frequency converters,

414

00:20:32,365 --> 00:20:34,165

<i> we immediately found out</i>

<i> that they were actually</i>

415

00:20:34,167 --> 00:20:36,567

<i> export controlled by the</i>

<i> nuclear regulatory commission.</i>

当我们查看这些变频器时，我们很快发现，实际上，他们是由（美国）核管制委员会来控制出口的。

416

00:20:37,169 --> 00:20:38,502

<i> And that immediately</i>

<i> lead us then</i>

417

00:20:38,504 --> 00:20:40,771

to some nuclear facility.

---

这使我们立马就联想到了核设施。

418

00:20:58,390 --> 00:21:00,524

Gibney:<i> This was more than</i>  
<i> a computer story,</i>

419

00:21:00,892 --> 00:21:03,327

<i> so I left the world</i>  
<i> of the antivirus detectives</i>

420

00:21:03,629 --> 00:21:05,563

<i> and sought out journalist,</i>  
<i> David sanger,</i>

吉布尼:这超出了计算机世界的范畴,所以我离开了国际反病毒专家委员会,找到了记者——  
大卫.桑格,

421

00:21:05,565 --> 00:21:07,798

<i> who specialized in</i>  
<i> the strange intersection</i>

422

00:21:07,800 --> 00:21:10,801

<i> of cyber, nuclear weapons,</i>  
<i> and espionage.</i>

他是一位沉迷于那些诸如网络、核武器、间谍活动等另类话题的记者。

423

00:21:11,770 --> 00:21:13,871

Sanger:  
<i> The emergence of the code</i>

424

00:21:13,873 --> 00:21:17,174

<i> is what put me on alert</i>  
<i> that an attack was under way.</i>

桑格: 该代码的出现让我警觉放攻击正在进行。

425

00:21:18,610 --> 00:21:21,779

<i> And because of the</i>

---

<i>covert nature of the operation,</i>

426

00:21:21,781 --> 00:21:24,782

<i> not only were official</i>

<i> government spokesmen</i>

427

00:21:24,784 --> 00:21:27,685

<i> unable to talk about it,</i>

<i>they didn't even know about it.</i>

因为操作隐蔽性,不仅政府官方发言人不能公开谈论它,而且他们甚至对此一无所知。

428

00:21:28,887 --> 00:21:30,955

<i> Eventually,</i>

<i> the more I dug into it,</i>

429

00:21:30,957 --> 00:21:35,559

the more I began to find

individuals

430

00:21:35,794 --> 00:21:37,995

who had been involved

in some piece of it

431

00:21:38,163 --> 00:21:40,231

or who had witnessed

some piece of it.

最终,随着挖掘的深入,我越来越发现有个别人曾参与和见证了这次攻击。

432

00:21:40,832 --> 00:21:43,234

And that meant

talking to Americans,

433

00:21:43,236 --> 00:21:46,137

talking to Israelis,

talking to Europeans,

434

00:21:46,139 --&gt; 00:21:49,240

because this was obviously  
the first, biggest,

435

00:21:49,242 --&gt; 00:21:53,811

and most sophisticated  
example of a state

436

00:21:53,813 --&gt; 00:21:56,447

or two states  
using a cyber weapon

437

00:21:56,449 --&gt; 00:21:57,982

for offensive purposes.

那就意味着跟美国人对话，跟以色列人对话，跟欧洲人对话，因为这显而易见的意味着这世界上头号、最大的、最先进的一个或两个国家正以进攻为目的而使用了网络武器。

438

00:22:01,420 --&gt; 00:22:04,322

<i> I came to this with</i>  
<i> a fair bit of history,</i>

439

00:22:04,324 --&gt; 00:22:07,091

<i> understanding the iranian</i>  
<i> nuclear program.</i>

我秉持着一个客观公正的历史态度来看待伊朗核计划。

440

00:22:08,126 --&gt; 00:22:11,529

<i>How did Iran get its first</i>  
<i> nuclear reactor?</i>

伊朗是如何得到第一个核反应堆的？

441

00:22:12,097 --&gt; 00:22:15,232

We gave it to them...  
Under the shah,  
我们把这件事归结在那些.....

在沙哈统治下.....

442

00:22:15,534 --> 00:22:18,969

<i>because the shah was considered</i>

<i> an American ally.</i>

因为沙哈曾被认为是美国的盟友。

443

00:22:20,473 --> 00:22:24,108

<i> Thank you again for your</i>

<i> warm welcome, Mr. president.</i>

尊敬的总统先生，对您的热烈欢迎再次表示感谢。

444

00:22:24,443 --> 00:22:26,043

Gary samore:<i> During</i>

<i> the Nixon administration,</i>

445

00:22:26,045 --> 00:22:29,313

<i> the U.S. was very enthusiastic</i>

<i> about supporting</i>

446

00:22:29,315 --> 00:22:31,415

<i> the shah's</i>

<i> nuclear power program.</i>

Gary samore:

加里 萨莫雷：在尼克松政府执政期间，美国是非常支持沙哈的核能源开发项目的。

447

00:22:32,317 --> 00:22:34,652

And at one point,

the Nixon administration

448

00:22:34,654 --> 00:22:37,488

was pushing the idea

that Pakistan and Iran

449

00:22:37,490 --> 00:22:42,093

should build a joint plant

---

together in Iran.

加里 萨莫雷：在这一点上，尼克松政府一直致力于推动巴基斯坦和伊朗两个国家在伊朗共同建立一个合作发电厂。

450

00:22:43,462 --> 00:22:45,162

<i> There's at least</i>

<i> some evidence that</i>

451

00:22:45,164 --> 00:22:48,666

<i> the shah was thinking about</i>

<i> acquisition of nuclear weapons,</i>

452

00:22:48,668 --> 00:22:52,203

<i> because he saw, and we were</i>

<i> encouraging him to see Iran</i>

453

00:22:52,205 --> 00:22:54,505

<i> as the so-called policemen</i>

<i> of the persian Gulf.</i>

至少有一些证据表明沙哈一直在考虑购买核武器，因为他看到我们一直在鼓励他以波斯湾警察的视角来看待伊朗。

454

00:22:54,507 --> 00:22:56,674

<i> And the iranians have always</i>

<i> viewed themselves</i>

455

00:22:56,676 --> 00:22:59,910

<i> as naturally the dominant power</i>

<i> in the middle east.</i>

而且伊朗人也习惯于以中东地区主导力量的眼光来看待他们自己。

456

00:23:22,501 --> 00:23:24,068

Samore:<i> But the revolution,</i>

457

00:23:24,070 --> 00:23:25,770

<i> which overthrew</i>

<i> the shah in '79,</i>

458

00:23:25,772 --> 00:23:27,571

<i> really curtailed the program</i>

459

00:23:27,573 --> 00:23:29,940

<i> before it ever got any</i>

<i> head of steam going.</i>

萨莫雷:但是1979年发生的推翻沙哈王朝的革命真正使得正处于蒸蒸日上的核能源开发计划处于了停滞状态。

460

00:23:31,042 --> 00:23:35,613

<i>Part of our policy against Iran</i>

<i> after the revolution</i>

461

00:23:35,615 --> 00:23:37,915

was to deny them

nuclear technology.

革命发生后,我们抵制伊朗的政策之一便是拒绝给他们提供核技术。

462

00:23:37,917 --> 00:23:41,218

So most of the period

when I was involved

463

00:23:41,220 --> 00:23:43,220

in the '80s and the '90s

464

00:23:43,222 --> 00:23:45,623

was the U.S. running

around the world

465

00:23:45,625 --> 00:23:48,893

and persuading potential

nuclear suppliers

466

---

00:23:48,895 --> 00:23:52,296

not to provide even peaceful  
nuclear technology to Iran.

所以我致力于研究的 80 年代和 90 年代这一时期中,美国绝大部分时间都是在满世界的游说,去说服那些潜在的核供应国不给伊朗提供核技术,即便是和平领用核技术。

467

00:23:52,531 --> 00:23:55,966

And what we missed  
was the clandestine transfer

468

00:23:55,968 --> 00:23:58,869

in the mid-1980s  
from Pakistan to Iran.

在 80 年代中期,我们未能发现巴基斯坦向伊朗秘密转移了核技术。

469

00:24:02,875 --> 00:24:04,108

Rolf mowatt-larssen:  
<i> Abdul qadeer Khan</i>

470

00:24:04,110 --> 00:24:05,443

<i> is what we would call</i>

471

00:24:05,445 --> 00:24:07,445

<i> the father of</i>  
<i> the Pakistan nuclear program.</i>

罗尔夫 莫厄特 拉森: 阿卜杜勒·卡迪尔·汗就是我们所说的巴基斯坦“核弹之父”。

472

00:24:08,880 --> 00:24:11,449

<i> He had the full authority</i>  
<i> and confidence</i>

473

00:24:11,451 --> 00:24:13,751

<i> of the Pakistan government</i>  
<i> from its inception</i>

474

00:24:13,753 --> 00:24:15,820

<i> to the production</i>

<i> of nuclear weapons.</i>

他通过核武器研发初期到其投入生产的丰功伟绩，在巴基斯坦政府中树立了自己的威望。

475

00:24:17,556 --> 00:24:19,890

I was a CIA officer for...

For...

我是中央情报局的官员.....

476

00:24:19,892 --> 00:24:22,560

For over two decades,

operations officer,

477

00:24:22,562 --> 00:24:24,361

worked overseas

most of my career.

在过去的二十年里，海外作战行动指挥官的工作占据了我的大部分职业生涯。

478

00:24:24,930 --> 00:24:26,997

The a.Q. Khan network

is so notable

479

00:24:26,999 --> 00:24:30,000

because aside from building

480

00:24:30,002 --> 00:24:33,037

the Pakistani program

for decades...

a.Q. Khan 网络非常出名，除了因为构建了几十年的巴基斯坦核问题外.....

481

00:24:34,272 --> 00:24:37,441

It also was the means

by which other countries

482

00:24:37,443 --> 00:24:40,077

<i> were able to develop</i>

---

<i> nuclear weapons,</i>

483

00:24:40,079 --> 00:24:41,378

<i> including Iran.</i>

这也意味着其他国家也能够开发核武器，包括伊朗。

484

00:24:41,980 --> 00:24:43,614

Samore:

<i> A.Q. Khan acting on behalf</i>

485

00:24:43,616 --> 00:24:44,682

<i> of the Pakistani government</i>

486

00:24:44,684 --> 00:24:47,785

negotiated

with officials in Iran

487

00:24:47,787 --> 00:24:50,821

and then there was a transfer

which took place

488

00:24:50,823 --> 00:24:51,889

through Dubai

489

00:24:51,891 --> 00:24:55,125

<i> of blueprints for</i>

<i> nuclear weapons design</i>

490

00:24:55,127 --> 00:24:56,727

<i> as well as some hardware.</i>

萨莫雷:在伊朗， A.Q. Khan 代表巴基斯坦政府的利益与当地官员谈判。而与此同时，通过迪拜，核武器的设计蓝图就如同某些硬件一样被转移了。

491

00:24:57,863 --> 00:24:59,864

<i> Throughout the mid-1980s,</i>

---

492

00:24:59,866 --&gt; 00:25:02,933

&lt;i&gt; the iranian program&lt;/i&gt;

&lt;i&gt; was not very well-resourced.&lt;/i&gt;

整个 80 年代中期，伊朗的核计划所需资源并不是很充足。

493

00:25:02,935 --&gt; 00:25:04,768

&lt;i&gt; It was more of&lt;/i&gt;

&lt;i&gt; an r &amp; d program.&lt;/i&gt;

这里有更多的研发项目。

494

00:25:05,804 --&gt; 00:25:09,006

&lt;i&gt; It wasn't really&lt;/i&gt;

&lt;i&gt; until the mid-'90s&lt;/i&gt;

495

00:25:09,008 --&gt; 00:25:11,275

&lt;i&gt; that it started to take off&lt;/i&gt;

&lt;i&gt; when they made the decision&lt;/i&gt;

496

00:25:11,277 --&gt; 00:25:13,344

&lt;i&gt; to build the nuclear weapons&lt;/i&gt;

&lt;i&gt; program.&lt;/i&gt;

直到 90 年代中期，他们才下定决心去搭建核武器发展计划。

497

00:25:20,018 --&gt; 00:25:21,519

&lt;i&gt; You know,&lt;/i&gt;

&lt;i&gt; we can speculate what,&lt;/i&gt;

498

00:25:21,521 --&gt; 00:25:22,953

in their mind,

motivated them.

你看，我们可以推测他们在想些什么，从而激励他们。

499

00:25:22,955 --&gt; 00:25:26,123

I think it was

the U.S. invasion of Iraq

500

00:25:26,125 --> 00:25:27,725

after Kuwait.

我认为美国借科威特之名入侵了伊拉克。

501

00: 25: 29027 -> 00: 25: 30494

<i> You know, there was an</i>

<i> eight-year war</i>

502

00: 25: 30496 -> 00: 25: 32062

<i> between Iraq and Iran,</i>

503

00: 25: 32,330 -> 00: 25: 35733

<i> we had wiped out Saddam's</i>

<i> forces in a matter of weeks.</i>

众所周知，在伊拉克和伊朗间有一场持续了八年的战争，我们在几周之内就消灭了萨达姆的部队。

504

00: 25: 38638 -> 00: 25: 41372

<i> And I think that was enough</i>

<i> to convince the rulers</i>

505

00: 25: 41374 -> 00: 25: 43541

<i> in Tehran</i>

<i> that they needed to pursue</i>

506

00: 25: 43543 -> 00: 25: 45109

<i>nuclear weapons more seriously.</i>

我觉得这已足够说服德黑兰的统治者更加认真的考虑其所大力推进的核武器发展计划。

507

00: 25: 47145 -> 00: 25: 50047

George Bush: States like these

and their terrorist allies

508

00: 25: 50049 -> 00: 25: 52883

constitute an axis of evil,

---

509

00: 25: 52885 -&gt; 00: 25: 55653

*arming to threaten**the peace of the world.*

乔治·布什：诸如这样的国家和他们的恐怖盟友构成了邪恶轴心国，以武力威胁着世界的和平。

510

00: 25: 57055 -&gt; 00: 25: 59690

*Samore:<i> From 2003 to 2005</i>*

511

00: 25: 59692 -&gt; 00: 26: 02993

*<i> when they feared that</i>**<i> the U.S. would invade them,</i>*

512

00: 26: 02995 -&gt; 00: 26: 05329

*<i> they accepted limits</i>**<i> on their nuclear program.</i>*

萨莫尔：2003年到2005年期间，他们担心美国会侵略他们，于是他们接受了对其核计划的限制。

513

00: 26: 05764 -&gt; 00: 26: 09400

*<i> But by 2006, the iranians</i>**<i> had come to the conclusion</i>*

514

00: 26: 09402 -&gt; 00: 26: 12,269

*<i> that the U.S. was bogged down</i>**<i> in Afghanistan and Iraq</i>*

515

00: 26: 12,271 -&gt; 00: 26: 15,472

*<i> and no longer had the capacity</i>**<i> to threaten them,</i>*

516

00: 26: 15,840 -&gt; 00: 26: 19577

*<i>and so they felt it was safe to</i>**<i>resume their enrichment program</i>*

但到了2006年，伊朗人已经得出了结论，即美国正深陷在阿富汗和伊拉克的战争泥潭中，

而不再有能力去威胁他们，所以他们认为恢复他们的铀浓缩计划是安全的。

517

00: 26: 20,345 -> 00: 26: 23013

<i> they started producing</i>

<i> low enriched uranium,</i>

518

00: 26: 23,281 -> 00: 26: 25282

<i> producing more centrifuges,</i>

<i> installing them</i>

519

00:26:25,284 --> 00:26:29,119

<i> at the large-scale underground</i>

<i> enrichment facility at natanz.</i>

他们开始通过纳坦兹大规模的地下铀浓缩设施生产出低浓缩铀，并生产出更多的离心机，并组装它们。

520

00: 26: 40,465 -> 00: 26: 45269

Journalist:

521

00: 26: 56448 -> 00: 27: 00551

Ahmadinejad:

新闻记者：艾哈迈迪内贾德：

522

00: 27: 33585 -> 00: 27: 35519

Gibney: How many times have you been to natanz?

吉布尼：你去过多少次纳坦兹？

523

00: 27: 35854 -> 00: 27: 39256

Not that many, because I left

few years ago, the dia,

524

00: 27: 39258 -> 00: 27: 41592

but I was there quite...

Quite a few times.

525

---

00: 27: 45130 -> 00: 27: 47698

<i> Natanz is just in the middle</i>

<i> of the desert.</i>

因为几年前我直接离开了，所以也不是很多次，但我确实去过好几次...纳坦兹正好位于沙漠中间。

526

00: 27: 49634 -> 00: 27: 51602

<i> When they were building it</i>

<i> in secret,</i>

527

00: 27: 51836 -> 00: 27: 55873

<i> they were calling it</i>

<i> desert irrigation facility.</i>

当他们秘密搭建它时，他们称这是在搭建沙漠灌溉设施。

528

00: 27: 56374 -> 00: 27: 57941

For the local people,

529

00: 27: 57943 -> 00: 28: 00511

you want to sell why you

are building a big complex.

对于当地人，你需要欺骗他们你为什么要建立这个大型的建筑群的。

530

00: 28: 03314 -> 00: 28: 06016

<i> There is a lot of artillery</i>

<i> and air force.</i>

那有很多门大炮、很多的飞机。

531

00: 28: 06018 -> 00: 28: 10421

<i> It's better protected</i>

<i> against attack from air</i>

532

00: 28: 10955 -> 00: 28: 13457

<i> than any other nuclear</i>

<i> installation I have seen.</i>

这是我曾经见过的最好的可保护其免受空袭的核军事基地。

533

00: 28: 16227 -&gt; 00: 28: 18696

*<i> So this is</i>**<i> deeply underground.</i>*

因此，这是深藏于地下的。

534

00: 28: 23301 -&gt; 00: 28: 27204

But then inside, natanz is like

any other centrifuge facility.

但是纳坦兹的离心机也和其他的离心机设施一样被建在了地面上。

535

00: 28: 27206 -&gt; 00: 28: 31542

I have been all over the world,

from Brazil to Russia, Japan,

536

00: 28: 31544 -&gt; 00: 28: 36080

so they are all alike

with their own features,

537

00: 28: 36082 -&gt; 00: 28: 38482

their own centrifuges,

their own culture,

538

00: 28: 38484 -&gt; 00: 28: 41085

but basically,

the process is the same.

我走遍了世界各地，从巴西到俄罗斯、再到日本，这些离心机都一样具备自己的特点，他们自己的离心机具有他们自己的文化，但基本上，过程都是相同的。

539

00: 28: 42153 -&gt; 00: 28: 45222

*<i> And so are the monitoring</i>**<i> activities of the iaea.</i>*

国际原子能机构的监测活动也是如此。

540

00: 28: 45224 -&gt; 00: 28: 46890

*<i> There are basic principles.</i>*

它们都有基本的原则。

541

00: 28: 46892 -&gt; 00: 28: 49626

&lt;i&gt; You want to see what goes in,&lt;/i&gt;

&lt;i&gt; what goes out,&lt;/i&gt;

542

00: 28: 49894 -&gt; 00: 28: 52062

&lt;i&gt; and then on top of that&lt;/i&gt;

&lt;i&gt; you make sure that&lt;/i&gt;

543

00: 28: 52064 -&gt; 00: 28: 54531

&lt;i&gt; it produces&lt;/i&gt;

&lt;i&gt; low enriched uranium&lt;/i&gt;

544

00: 28: 54533 -&gt; 00: 28: 56,934

&lt;i&gt; instead of anything to do with&lt;/i&gt;

&lt;i&gt; the higher enrichments&lt;/i&gt;

545

00: 28: 56936 -&gt; 00: 28: 59103

&lt;i&gt; and nuclear weapon&lt;/i&gt;

&lt;i&gt; grade uranium.&lt;/i&gt;

你想看看什么运进来，什么运出去，此外，你还需要确保它生产出的是低浓缩铀，而不是任何高度的浓缩与核武器级铀。

546

00: 29: 05076 -&gt; 00: 29: 06443

Emad kiyaei:&lt;i&gt; Iran's nuclear facilities&lt;/i&gt;

547

00: 29: 06445 -&gt; 00: 29: 08679

&lt;i&gt; are under 24-hour watch.&lt;/i&gt;

548

00: 29: 09380 -&gt; 00: 29: 11715

&lt;i&gt; Of the united nations&lt;/i&gt;

&lt;i&gt; nuclear watchdog,&lt;/i&gt;

549

00: 29: 11,717 -&gt; 00: 29: 15018

<i> the iaea, the international</i>

<i> atomic energy agency.</i>

伊马德 齐亚埃：伊朗核设施正处在联合国核监督机构、国际原子能机构 24 小时不间断观察中。

550

00: 29: 16387 -> 00: 29: 20,591

Every single gram of iranian

fissile material...

伊朗的每一克裂变材料...

551

00: 29: 21,793 -> 00: 29: 23160

Is accounted for.

所占的比重。

552

00: 29: 25964 -> 00: 29: 28,432

<i> They have, like, basically</i>

<i> seals they put</i>

553

00: 29: 28434 -> 00: 29: 32002

<i> on fissile materials.</i>

<i> There are iaea seals.</i>

只要他们有一样裂变材料，基本上就会被封存。那儿就会有国际原子能机构的封印。

554

00: 29: 32237 -> 00: 29: 34,538

You can't break it

555

00: 29: 34540 -> 00: 29: 36373

without getting noticed.

你不能在不注意的情况下撕下它。

556

00: 29: 38376 -> 00: 29: 40611

Heinonen:<i> When you look</i>

<i> at the uranium</i>

557

00: 29: 40613 -> 00: 29: 44481

<i> which was there in natanz,</i>

---

<i> it was a very special uranium.</i>

海诺宁：你看看在纳坦兹的这个铀，它是一种非常特殊的铀。

558

00: 29: 44649 -> 00: 29: 50053

This is called isotope 236,  
and that was a puzzle to us,  
这就是所谓的同位素 236  
这件事是令我们困惑的。

559

00: 29: 50055 -> 00: 29: 52489

because you only see  
this sort of uranium

560

00: 29: 52491 -> 00: 29: 55626

in states which  
have had nuclear weapons.  
因为你看到的这种铀存在于已拥有核武器的国家中。

561

00: 29: 57495 -> 00: 30: 00197

<i> We realized that</i>  
<i> they had cheated us.</i>  
我们意识到，他们骗了我们。

562

00: 30: 00899 -> 00: 30: 04168

<i> This sort of equipment</i>  
<i> has been bought</i>

563

00: 30: 04170 -> 00: 30: 05969

from what they call  
a black market.  
正如他们所说的，这种类型的设备已经被人从黑市买走了。

564

00: 30: 05971 -> 00: 30: 09206

They never pointed out  
it to a.Q. Khan  
他们从来不承认把它卖给了 a.Q. Khan。

565

00: 30: 09641 -&gt; 00: 30: 11,441

at that point of time.

566

00: 30: 16,314 -&gt; 00: 30: 19,650

&lt;i&gt; What I was surprised&lt;/i&gt;

&lt;i&gt; was the sophistication&lt;/i&gt;

567

00: 30: 19652 -&gt; 00: 30: 21485

&lt;i&gt; and the quality control&lt;/i&gt;

568

00: 30: 21786 -&gt; 00: 30: 23787

&lt;i&gt; and the way they have&lt;/i&gt;

&lt;i&gt; the manufacturing&lt;/i&gt;

569

00: 30: 23789 -&gt; 00: 30: 25,189

&lt;i&gt; was really professional.&lt;/i&gt;

在那个时间点，令我惊讶的是掺杂品、他们制造的方式和对质量的控制真的很专业。

570

00: 30: 26324 -&gt; 00: 30: 28926

It was not something,

you know, you just create

571

00: 30: 28928 -&gt; 00: 30: 30460

in a few months' time.

在过去的几个月的时间里，它并不是你知道的某种东西，你只是创造。

572

00: 30: 30462 -&gt; 00: 30: 33197

This was a result

of a long process.

这是一个漫长过程的结果。

573

00: 30: 40305 -&gt; 00: 30: 43106

&lt;i&gt; A centrifuge,&lt;/i&gt;

&lt;i&gt; you feed uranium gas&lt;/i&gt;

574

00: 30: 43108 -&gt; 00: 30: 46210

&lt;i&gt; in and you have a cascade,&lt;/i&gt;

&lt;i&gt; thousands of centrifuges,&lt;/i&gt;

575

00: 30: 46212 -&gt; 00: 30: 49213

&lt;i&gt; and from the other end&lt;/i&gt;

&lt;i&gt; you get enriched uranium out.&lt;/i&gt;

一个离心机，你给它注入铀气体，这样你就有一个级联、数千台离心机，从另一端，你得到了浓缩铀。

576

00: 30: 49948 -&gt; 00: 30: 53951

&lt;i&gt; It separates uranium based on&lt;/i&gt;

&lt;i&gt; spinning the rotors.&lt;/i&gt;

它基于旋转转子的铀分离。

577

00: 30: 53953 -&gt; 00: 30: 57721

&lt;i&gt; It spins so fast,&lt;/i&gt;

&lt;i&gt; 300 meters per second,&lt;/i&gt;

578

00: 30: 57723 -&gt; 00: 31: 00757

&lt;i&gt; the same as&lt;/i&gt;

&lt;i&gt; the velocity of sound.&lt;/i&gt;

它旋转速度如此之快，能够达到每秒 300 米，这与声音的速度相同。

579

00: 31: 02126 -&gt; 00: 31: 03794

&lt;i&gt; These are tremendous forces&lt;/i&gt;

580

00: 31: 03796 -&gt; 00: 31: 06730

&lt;i&gt; and as a result,&lt;/i&gt;

&lt;i&gt; the rotor, it twists,&lt;/i&gt;

581

00: 31: 06732 -&gt; 00: 31: 08899

&lt;i&gt; looks like a banana&lt;/i&gt;

&lt;i&gt; at one point of time.&lt;/i&gt;

这些都是巨大的力量，其结果是转子扭曲，在一个时间点，它转看起来就像一根香蕉。

582

00: 31: 10301 -&gt; 00: 31: 11,869

So it has to be balanced

583

00: 31: 11871 -&gt; 00: 31: 15239

because any small vibration

it will blow up.

所以它必须被平衡，因为任何小的震动都会引起它的爆炸。

584

00: 31: 16641 -&gt; 00: 31: 18575

&lt;i&gt;And here comes another trouble.&lt;/i&gt;

这里谈到的另一个麻烦。

585

00: 31: 18,877 -&gt; 00: 31: 21044

&lt;i&gt; You have to raise&lt;/i&gt;

&lt;i&gt; the temperature&lt;/i&gt;

586

00: 31: 21,046 -&gt; 00: 31: 24147

&lt;i&gt; but this very thin&lt;/i&gt;

&lt;i&gt; rotor was...&lt;/i&gt;

你不得不提高温度，但这种非常薄的转子是.....

587

00: 31: 24149 -&gt; 00: 31: 26183

&lt;i&gt; They are made from&lt;/i&gt;

&lt;i&gt; carbon fiber,&lt;/i&gt;

588

00: 31: 26185 -&gt; 00: 31: 28819

&lt;i&gt; and the other pieces,&lt;/i&gt;

&lt;i&gt; they are made from metal.&lt;/i&gt;

它们由碳纤维组成，另外的部分则是由金属制成的。

589

00: 31: 29721 -&gt; 00: 31: 33223

When you heat

carbon fiber, it shrinks.

一旦你使碳纤维变热，它就会收缩。

590

00: 31: 34325 -> 00: 31: 36627

When you heat metal,  
it expands.

一旦你加热金属，它就会膨胀。

591

00: 31: 36995 -> 00: 31: 40030

So you need to balance not only  
that they spin,

592

00: 31: 40032 -> 00: 31: 43166

they twist,  
but this temperature behavior  
它们的扭曲，而且还有这种温度特性。

593

00: 31: 43168 -> 00: 31: 45402

*in such a way that*

*it doesn't break.*

所以，你需要平衡的不仅仅是它们的旋转，在这样一种方式下，它不会出错。

594

00: 31: 45404 -> 00: 31: 47604

*So this has to be*

*very precise.*

所以这必须非常精确。

595

00: 31: 48106 -> 00: 31: 50574

*This is what makes them*

*very difficult to manufacture.*

这就是它们非常难以制造的原因。

596

00: 31: 50576 -> 00: 31: 53243

You can model it,  
you can calculate it,

597

00: 31: 53245 -> 00: 31: 55712

but at the very end,

---

it's actually based

598

00: 31: 55714 -> 00: 31: 58348

on practice and experience.

你可以模拟它，你可以计算，但说到底，它实际上是基于实践和经验。

599

00: 31: 58350 -> 00: 32: 01652

So it's a...

It's a piece of art, so to say.

所以这是一个.....

可以这么说，它是一件艺术品。

600

00: 32: 12,131 -> 00: 32: 17768

Man

男人：

601

00: 32: 42593 -> 00: 32: 44928

Heinonen:<i> Iranians are very</i>

<i> proud of their centrifuges.</i>

海诺宁：伊朗人为他们的离心机而感到骄傲。

602

00: 32: 44930 -> 00: 32: 47898

<i> They have a lot of</i>

<i> public relations videos</i>

603

00: 32: 47900 -> 00: 32: 51635

<i> given up always in April</i>

<i> when they have what they call</i>

604

00: 32: 51637 -> 00: 32: 53136

<i> a national nuclear day.</i>

在4月份，当遇到他们所说的国际核日时，他们的很多公共关系影片就会被禁播。

605

00: 32: 54138 -> 00: 32: 57641

Man:

男人：

606

00: 33: 07453 -> 00: 33: 10821

Kiyaei:<i> Ahmadinejad came into</i>  
<i> his presidency saying</i>

607

00: 33: 10,823 -> 00: 33: 13423

if the international community  
wants to derail us

608

00: 33: 13,425 -> 00: 33: 15092

we will stand up to it.

齐里埃：内贾德来到他的总统面前说，如果国际社会想要孤立我们，我们会经得起考验。

609

00: 33: 16,160 -> 00: 33: 18862

If they want us to sign more  
inspections

610

00: 33: 18864 -> 00: 33: 22132

and more additional protocols  
and other measures,

611

00: 33: 22134 -> 00: 33: 24,868

no, we will not.

We will fight for our rights.

如果他们要我们签署更多的检验证书和更多的附加议定书或者其他的评估的话，不，我们不会同意。我们会为自己的权利而战。

612

00: 33: 26105 -> 00: 33: 29172

<i> Iran is a signature to nuclear</i>  
<i> non-proliferation treaty,</i>

613

00: 33: 29174 -> 00: 33: 32776

<i>and under that treaty, Iran has</i>  
<i> a right to a nuclear program.</i>

伊朗签署了核不扩散条约，在那个条约下，伊朗可以拥有核计划。

614

00: 33: 33344 -&gt; 00: 33: 36813

&lt;i&gt; We can have enrichment.&lt;/i&gt;

&lt;i&gt;Who are you, world powers,&lt;/i&gt;

我们可以拥有浓铀。你是谁？世界大国？

615

00: 33: 36815 -&gt; 00: 33: 39282

&lt;i&gt; to come and tell us that we&lt;/i&gt;

&lt;i&gt; cannot have enrichment?&lt;/i&gt;

请来告诉我们为什么就不能拥浓铀？

616

00: 33: 39650 -&gt; 00: 33: 41385

This was his mantra,

617

00: 33: 42,120 -&gt; 00: 33: 45489

and it galvanized

the public.

这是他的口头禅，同时也激励着民众。

618

00: 33: 49060 -&gt; 00: 33: 51461

Sanger:&lt;i&gt; By 2007, 2008,&lt;/i&gt;

619

00: 33: 51463 -&gt; 00: 33: 53964

&lt;i&gt; the U.S. government&lt;/i&gt;

&lt;i&gt; was in a very bad place with&lt;/i&gt;

620

00: 33: 53966 -&gt; 00: 33: 55265

&lt;i&gt; the iranian program.&lt;/i&gt;

桑格：到了 2007、2008 年，美国政府因为伊朗核计划而处于一个很尴尬的处境。

621

00: 33: 56,234 -&gt; 00: 33: 58335

&lt;i&gt; President bush recognized&lt;/i&gt;

622

00: 33: 58337 -&gt; 00: 34: 00971

&lt;i&gt; that he could not even&lt;/i&gt;

<i> come out in public</i>

623

00: 34: 00973 -> 00: 34: 03473

<i> and declare that the iranians</i>

<i>were building a nuclear weapon,</i>

美国总统布什承认了他甚至不能在公开场合披露的消息，他宣布伊朗人正在制造核武器，

624

00: 34: 03475 -> 00: 34: 05308

<i> because by this time,</i>

<i> he had gone through</i>

625

00: 34: 05310 -> 00: 34: 08612

<i> the entire wmd fiasco in Iraq.</i>

因为直到这个时候，他经历了伊拉克整个大规模杀伤性武器的惨败。

626

00: 34: 09313 -> 00: 34: 11581

He could not really take

military action.

他无法真正地采取军事行动。

627

00: 34: 11583 -> 00: 34: 13984

<i> Condoleezza rice said to him</i>

<i> at one point,</i>

在这点上，康德莉莎 赖斯对他说：

628

00: 34: 13986 -> 00: 34: 17387

<i> "you know, Mr. president,</i>

<i> I think you've invaded</i>

629

00: 34: 17389 -> 00: 34: 21058

<i> your last Muslim country,</i>

<i> even for the best of reasons."</i>

“你知道，尊敬的总统先生，即便是以最好的理由，我想你也已经侵入到了你最后的穆斯林国家。”

630

00: 34: 22894 -> 00: 34: 25095

---

<i> He didn't want to let</i>

<i> the Israelis</i>

631

00: 34: 25097 -> 00: 34: 26930

<i> conduct a military operation.</i>

他不想让以色列人采取军事行动。

632

00: 34: 27265 -> 00: 34: 33003

It's 1938, and Iran is Germany

and it's racing...

1938年的伊朗就是德国。它正在角逐.....

633

00: 34: 33838 -> 00: 34: 36440

To arm itself

with atomic bombs.

634

00: 34: 37041 -> 00: 34: 40610

Iran's nuclear ambitions

must be stopped.

为了用原子弹武装自己，伊朗的核野心必须得到制止。

635

00: 34: 41279 -> 00: 34: 46016

They have to be stopped.

We all have to stop it, now.

它们必须得到制止。我们现在都必须采取行动去制止。

636

00: 34: 46018 -> 00: 34: 48618

That's the one message

i have for you today.

那是我今天要告诉你的消息。

637

00: 34: 48620 -> 00: 34: 50520

- Thank you.

- 谢谢。

638

00: 34: 50522 -> 00: 34: 53390

---

Israel was saying  
they were gonna bomb Iran.  
以色列说他们要去轰炸伊朗。

639  
00: 34: 53392 -> 00: 34: 56593  
And the government here  
in Washington

640  
00: 34: 56595 -> 00: 34: 58962  
did all sorts of scenarios  
about what would happen

641  
00: 34: 58964 -> 00: 35: 01531  
if that Israeli attack occurred.  
位于华盛顿的政府对于若以色列被攻击了可能发的各种情况做出了各种应对方案。

642  
00: 35: 01933 -> 00: 35: 04101  
They were all  
very ugly scenarios.  
他们都会处于非常难堪的境况。

643  
00: 35: 04103 -> 00: 35: 07104  
Our belief was that if  
they went on their own

644  
00: 35: 07106 -> 00: 35: 08905  
knowing the limitations...  
我们的信念是，如果他们自己知道该限制...

645  
00: 35: 08907 -> 00: 35: 10807  
No, they're a very good  
air force, all right?  
不，他们是很好的空军？对吧？

646  
00: 35: 11142 -> 00: 35: 13210  
But it's small

---

and the distances are great

647

00: 35: 13,212 -> 00: 35: 15612

and the target's disbursed

and hardened, all right?

但是它很小而距离却很大与目标的承诺和硬化，对吗？

648

00: 35: 16614 -> 00: 35: 19,182

If they would have

attempted a raid

649

00: 35: 19884 -> 00: 35: 21618

on a military plane,

如果他们企图袭击军用飞机，

650

00: 35: 21919 -> 00: 35: 24721

we would have been assuming that

they were assuming

我们将假定他们所假设的

651

00: 35: 24723 -> 00: 35: 27,290

we would finish

that which they started.

我们将完成他们开始的工作。

652

00: 35: 27292 -> 00: 35: 29,926

In other words,

there would be many of us

653

00: 35: 29928 -> 00: 35: 31962

in government thinking that

the purpose of the raid

换句话说，会有很多我们政府对于突袭目的的考虑，

654

00: 35: 31964 -> 00: 35: 34498

wasn't to destroy

---

the iranian nuclear system,  
即并不是要破坏伊朗的核系统，

655

00: 35: 34500 -> 00: 35: 38168  
but the purpose of the raid  
was to put us at war with Iran.

656

00: 35: 39103 -> 00: 35: 41138  
Israel is very much  
concerned about

657

00: 35: 41140 -> 00: 35: 43807  
Iran's nuclear program,  
more than the United States.  
以色列非常关注伊朗的核计划，其关注程度远超美国。

658

00: 35: 43809 -> 00: 35: 46576  
It's only natural because  
of the size of the country,  
这是很自然的，因为以色列国土面积有限，

659

00: 35: 46578 -> 00: 35: 48979  
because we live in this  
neighborhood,  
因为二者的毗邻关系，

660

00: 35: 48981 -> 00: 35: 52616  
America lives thousands and  
thousands miles away from Iran.  
而美国却距离伊朗数千里。

661

00: 35: 52618 -> 00: 35: 56253  
The two countries agreed on  
the goal.  
两国的目标一致。

662

---

00: 35: 56521 -> 00: 35: 59289

There is no page between us

663

00: 35: 59291 -> 00: 36: 04628

that Iran should not have

a nuclear military capability.

我们之间没有任何关于伊朗不应该拥有核军事能力的书面文件。

664

00: 36: 04630 -> 00: 36: 06630

There are some differences

665

00: 36: 06632 -> 00: 36: 08999

on how to...

How to achieve it

666

00: 36: 09001 -> 00: 36: 11301

and when action is needed.

当需要采取行动时，在如何去...如何去实现目标上我们存在一些分歧。

667

00: 36: 20811 -> 00: 36: 23213

Yadlin:<i> We are taking</i>

<i> very seriously</i>

668

00: 36: 23215 -> 00: 36: 25,949

leaders of countries who call to

the destruction

669

00: 36: 25951 -> 00: 36: 28585

and annihilation of our people.

亚德林：我们正在很认真的对待声称要毁灭我们国家领导人和人民的威胁。

670

00: 36: 28786 -> 00: 36: 31288

If Iran will get

nuclear weapons,

671

---

00: 36: 31290 -> 00: 36: 32756

now or in the future...

如果伊朗现在或者将来拥有了核武器……

672

00: 36: 33724 -> 00: 36: 36560

It means that for the first time

in human history

这意味着，人类历史上第一次

673

00: 36: 37361 -> 00: 36: 40063

islamic zealots,

religious zealots,

674

00: 36: 40731 -> 00: 36: 43066

will get their hand on

675

00: 36: 43068 -> 00: 36: 46036

the most dangerous,

devastating weapons,

由伊斯兰狂热分子、宗教狂热者掌握着最危险的、毁灭性的武器，

676

00: 36: 46038 -> 00: 36: 48805

and the world should

prevent this.

而全世界应该阻止这件事的发生。

677

00: 36: 50975 -> 00: 36: 54744

Samore:<i> The Israelis believe</i>

<i> that the iranian leadership</i>

萨莫尔：以色列人相信伊朗领导层

678

00: 36: 54746 -> 00: 36: 57681

<i> has already made the decision</i>

<i> to build nuclear weapons</i>

679

00: 36: 57683 -> 00: 36: 59583

<i> when they think</i>

<i> they can get away with it.</i>

一旦他们认为可以逃脱处罚，就会做出制造核武器的决定。

680

00: 36: 59984 -> 00: 37: 02752

<i> The view in the U.S.</i>

<i> is that the iranians</i>

而美国的观点则是伊朗人

681

00: 37: 02754 -> 00: 37: 04921

<i> haven't made that</i>

<i> final decision yet.</i>

目前还没有最终做出决定。

682

00: 37: 05890 -> 00: 37: 07824

To me, that doesn't make

any difference.

对我来说，这并不存在任何区别。

683

00: 37: 07826 -> 00: 37: 09559

I mean, it really doesn't make

any difference,

我的意思是，这真的没有任何区别，

684

00: 37: 09561 -> 00: 37: 12729

and it's probably unknowable,

unless you can put, you know,

这可能是不可知的，除非你能说，

685

00: 37: 12731 -> 00: 37: 16099

supreme leader khamenei

on the couch and interview him.

你能与其最高领袖哈梅内伊坐到沙发上并与其面谈。

686

00: 37: 16101 -> 00: 37: 19035

<i> I think, you know,</i>

<i> from our standpoint,</i>

---

我想，你也知道，  
从我们的角度来看，

687

00: 37: 19037 -> 00: 37: 21671  
<i> stopping Iran from getting</i>  
<i> the threshold capacity</i>

688

00: 37: 21673 -> 00: 37: 24808  
<i> is, you know,</i>  
<i> the primary policy objective.</i>  
阻止伊朗获得核武器制造的入门能力是我们主要的政策目标。

689

00: 37: 26110 -> 00: 37: 28211  
<i> Once they have</i>  
<i> the fissile material,</i>  
一旦他们掌握了裂变材料，

690

00: 37: 28213 -> 00: 37: 30614  
<i> once they have the capacity to</i>  
<i> produce nuclear weapons,</i>  
一旦他们有能力制造出核武器，

691

00: 37: 30616 -> 00: 37: 31982  
<i> then the game is lost.</i>  
那么游戏就结束了。

692

00: 37: 37788 -> 00: 37: 39589  
Hayden:<i> President bush once said</i>  
<i> to me, he said,</i>  
海登：美国总统布什曾经对我说过，他说，

693

00: 37: 39591 -> 00: 37: 42692  
<i> "Mike, I don't want any</i>  
<i> president ever to be faced</i>

694

00: 37: 42694 -> 00: 37: 46730

---

with only two options,  
bombing or the bomb."

“迈克，我不希望做任何一个总统都不曾面对的两个选择：轰炸或炸弹”。

695

00: 37: 46732 -> 00: 37: 47964

Right?

对吗？

696

00: 37: 47966 -> 00: 37: 51534

He... he wanted options that...

That made it...

他.....他想要的选项...

这使得它...

697

00: 37: 51736 -> 00: 37: 54704

Made it far less likely

he or his successor

这使得他或他的继任者更不可能

698

00: 37: 54706 -> 00: 37: 57,240

or successors

would ever get to that point

或接下来的继任者将永远不会做到这一点

699

00: 37: 57242 -> 00: 37: 58875

where that's...

That's all you've got.

那就是...

这就是你所得到的。

700

00: 37: 59210 -> 00: 38: 02846

We wanted to be energetic enough

in pursuing this problem

我们希望有足够的充沛精力来解决这个问题

701

00: 38: 03214 -> 00: 38: 06216

that... that the Israelis would

certainly believe,  
恩.....以色列人当然也会相信,

702

00: 38: 06218 -> 00: 38: 07417

"yeah, we get it."

“是的，我们明白。”

703

00: 38: 07419 -> 00: 38: 09552

The intelligence cooperation  
between Israel

704

00: 38: 09554 -> 00: 38: 12989

and the United States

is very, very good.

以色列和美国情报组织之间的合作非常好。

705

00: 38: 13758 -> 00: 38: 16059

<i> And therefore, the Israelis</i>

<i> went to the Americans</i>

因此，以色列人对美国人

706

00: 38: 16061 -> 00: 38: 19663

<i> and said, "okay, guys,</i>

<i>you don't want us to bomb Iran.</i>

说：“好吧，伙计们，你们不想让我们轰炸伊朗。

707

00: 38: 19,665 -> 00: 38: 22,832

<i>Okay, let's do it differently."</i>

好吧，让我们做些不同的事吧。”

708

00: 38: 23334 -> 00: 38: 26903

<i> And then the American</i>

<i> intelligence community started</i>

709

00: 38: 26905 -> 00: 38: 28605

<i> rolling in joint forces</i>

---

710

00: 38: 28,607 -> 00: 38: 30573

<i> with the Israeli</i>

<i> intelligence community.</i>

接下来，美国情报组织开始和以色列情报组织联合起来行动。

711

00: 38: 31242 -> 00: 38: 35245

One day a group of intelligence  
and military officials showed up

712

00: 38: 35946 -> 00: 38: 37881

in president bush's office

一天，一群情报组织官员和军事官员出现在了总统办公室里，

713

00: 38: 38482 -> 00: 38: 40016

and said,

"sir, we have an idea.

说道：“先生，我们有一个想法。

714

00: 38: 41152 -> 00: 38: 42485

It's a big risk.

它存在很大的风险。

715

00: 38: 43020 -> 00: 38: 44821

It might not work,

but here it is."

它可能不工作，但在这里它是”。

716

00: 38: 52363 -> 00: 38: 55999

Langner:<i> Moving forward in</i>

<i> my analysis of the codes,</i>

兰纳：我对代码进行持续不断的分析，

717

00: 38: 56001 -> 00: 39: 00036

<i> I took a closer look</i>

<i> at the photographs</i>

我接过这些照片仔细一看

718

00: 39: 00038 -> 00: 39: 01871

<i> that had been published</i>

719

00: 39: 01873 -> 00: 39: 06643

by the iranians themselves

in a press tour from 2008

都是由伊朗人自己从 2008 年开始拍摄并公布的新闻之旅照片。

720

00: 39: 06645 -> 00: 39: 09779

<i> of ahmadinejad</i>

<i> and the shiny centrifuges.</i>

艾哈迈迪内贾德和闪亮的离心机。

721

00: 39: 12,183 -> 00: 39: 14050

Sanger:<i> Well, photographs</i>

<i> of ahmadinejad</i>

722

00: 39: 14,052 -> 00: 39: 16853

<i> going through</i>

<i> the centrifuges at natanz</i>

723

00: 39: 16,855 -> 00: 39: 20290

<i> had provided some</i>

<i> very important clues.</i>

桑格：嗯，艾哈迈迪内贾德在纳坦兹视察离心机的照片提供了一些非常重要的线索。

724

00: 39: 20,991 -> 00: 39: 23193

There was a huge amount

to be learned.

从中可以分析出大量的信息。

725

00: 39: 31502 -> 00: 39: 34,304

<i> First of all,</i>

<i> those photographs showed</i>

---

首先，这些照片显示出

726

00: 39: 34306 -> 00: 39: 37640

<i> many of the individuals</i>

<i> who were guiding ahmadinejad</i>

727

00: 39: 37642 -> 00: 39: 38808

<i> through the program.</i>

有许多为艾哈迈迪内贾德核计划出谋划策的人出席了该活动。

728

00: 39: 38810 -> 00: 39: 41411

<i> And there's one very famous</i>

<i> photograph that shows</i>

其中有一张非常出名的照片显示

729

00: 39: 41413 -> 00: 39: 43413

<i> ahmadinejad being shown</i>

<i> something.</i>

艾哈迈迪内贾德正在展示一些东西。

730

00: 39: 43415 -> 00: 39: 45982

<i> You see his face, you can't see</i>

<i> what's on the computer.</i>

你能看到他的脸，但你看不到电脑里显示的是什么。

731

00: 39: 45984 -> 00: 39: 49419

<i> And one of the scientists</i>

<i> who was behind him</i>

732

00: 39: 49421 -> 00: 39: 51821

<i> was assassinated</i>

<i> a few months later.</i>

而站在他后面的科学家中有一位在几个月后被暗杀了。

733

00: 39: 56193 -> 00: 39: 57927

Langner:<i> In one of</i>

---

<i> those photographs,</i>

兰纳：在这些照片中的一张里，

734

00: 39: 58195 -> 00: 40: 01531

you could see parts

of a computer screen.

你可以看到电脑屏幕中的部分内容。

735

00: 40: 01533 -> 00: 40: 04,100

We... we refer to that as a scada screen.

我们.....我们指的是作为 SCADA（监控和数据采集系统）的屏幕。

736

00: 40: 04102 -> 00: 40: 07070

<i> The scada system is basically</i>

<i> a piece of software</i>

737

00: 40: 07072 -> 00: 40: 08671

<i> running on a computer.</i>

监控系统是一个软件最基础的部分在计算机上运行。

738

00: 40: 08673 -> 00: 40: 12,275

<i> It enables the operators</i>

<i> to monitor the processes.</i>

它使得操作员可以对进程进行监测。

739

00: 40: 13277 -> 00: 40: 17414

What you could see

when you look close enough

当你看足够接近这张图时，你能看到

740

00: 40: 17948 -> 00: 40: 22285

<i> was a more detailed view</i>

<i> of the configuration</i>

一个更详细的结构视图。

741

00: 40: 23087 -> 00: 40: 26389

---

<i> there were these six groups</i>  
<i> of centrifuges</i>  
图中有离心机的六个组

742

00: 40: 26391 -> 00: 40: 29826  
<i> and each group</i>  
<i> had 164 entries.</i>  
每个组有 164 项。

743

00: 40: 30394 -> 00: 40: 31961  
And guess what?  
你猜这是什么？

744

00: 40: 32263 -> 00: 40: 34597  
That was a perfect match  
to what we saw

745

00: 40: 34599 -> 00: 40: 35965  
in the attack code.  
这是我们在攻击代码中所见到的很完美的匹配。

746

00: 40: 37301 -> 00: 40: 40703  
<i> It was absolutely clear</i>  
<i> that this piece of code</i>  
这是一段绝对清晰的代码。

747

00: 40: 40705 -> 00: 40: 44274  
<i> was attacking an array</i>  
<i> of six different groups</i>  
它正在攻击一个由六个不同群体组成的阵列。

748

00: 40: 44276 -> 00: 40: 48111  
<i> of, let's just say,</i>  
<i> thingies, physical objects,</i>  
我们只能说，一样的东西，物理对象，

749

00: 40: 48113 -> 00: 40: 54017

<i> and in those six groups,</i>

<i> there were 164 elements.</i>

在这六个群体中，存在 164 项。

750

00: 40: 57721 -> 00: 41: 00056

Gibney: Were you able to do

any actual physical tests?

吉布尼：你能做些实际的物理测试吗？

751

00: 41: 00058 -> 00: 41: 02292

Or it was all just

code analysis?

还是这一切只是代码分析？

752

00: 41: 02294 -> 00: 41: 04227

Yeah, so, you know,

we obviously

是啊，所以，你知道，

我们明显

753

00: 41: 04229 -> 00: 41: 07297

couldn't set up our own sort

of nuclear enrichment facility.

无法组建我们自己的核浓缩设施。

754

00: 41: 07465 -> 00: 41: 09766

So... but what we did was

we did obtain some plcs,

所以.....我们所做的就是确实得到了一些 plc 的

755

00: 41: 09768 -> 00: 41: 11000

the exact models.

确切型号。

756

00: 41: 18175 -> 00: 41: 20577

<i> We then ordered an air pump,</i>

---

<i> and that's what we used</i>

然后我们订购了一个气泵，  
这就是我们使用过的

757

00: 41: 20579 -> 00: 41: 22245

<i> sort of as our sort of</i>

<i> proof of concept.</i>

作为我们各种概念验证用的。

758

00: 41: 23080 -> 00: 41: 24814

O'murchu:<i> We needed</i>

<i> a visual demonstration</i>

O'murchu: 我们需要可视化演示

759

00: 41: 24816 -> 00: 41: 27016

<i> to show people</i>

<i> what we discovered.</i>

来向人们展示我们所发现的。

760

00: 41: 27318 -> 00: 41: 29352

So we thought of different

things that we could do,

因此，我们思考了我们能做的不同事情

761

00: 41: 29354 -> 00: 41: 31488

and we... we settled

on blowing up a balloon.

然后我们...我们解决问题如同吹个气球一样。

762

00: 41: 35826 -> 00: 41: 37794

<i>We were able to write a program</i>

<i> that would inflate a balloon,</i>

我们可以写一个能吹气球的程序，

763

00: 41: 37796 -> 00: 41: 40697

<i> and it was set to stop</i>

<i> after five seconds.</i>

它被设置为过 5 秒钟就停止吹气。

764

00: 41: 50674 -> 00: 41: 52442

*So it would inflate the balloon*

*to a certain size*

因此，即使将气囊充气到一定尺寸时，

765

00: 41: 52444 -> 00: 41: 53943

*but it wouldn't*

*burst the balloon*

它也不会爆炸

766

00: 41: 53945 -> 00: 41: 55378

*and it was all safe.*

而这一切都是安全的。

767

00: 41: 55380 -> 00: 41: 57480

And we showed everybody,

this is the code

768

00: 41: 57482 -> 00: 41: 58715

that's on the plc.

而我们展示给每个人的是 PLC 上的代码。

769

00: 41: 59149 -> 00: 42: 01117

*And the timer says,*

*"stop after five seconds."*

计时器说，“五秒钟后停止。”

770

00: 42: 01352 -> 00: 42: 02886

*We know that's*

*what's going to happen.*

我们知道接下来会发生什么事情。

771

00: 42: 03487 -> 00: 42: 05755

And then we would infect

the computer with stuxnet,  
然后我们会用震网病毒感染计算机

772

00: 42: 06290 -> 00: 42: 08558

<i> and we would</i>

<i> run the test again.</i>

我们会再次运行测试程序。

773

00: 42: 39757 -> 00: 42: 41357

Here is

a piece of software

774

00: 42: 41359 -> 00: 42: 44327

that should only exist

in a cyber realm

这是一个只存在于网络领域的软件。

775

00: 42: 44329 -> 00: 42: 47430

and it is able to affect

physical equipment

776

00: 42: 47,432 -> 00: 42: 51167

in a plant or factory

and cause physical damage.

并且它能够影响到车间或工厂里的物理仪器，从而造成物理损害。

777

00: 42: 51169 -> 00: 42: 53236

Real-world physical destruction.

真实世界的物理破坏。

778

00: 42: 57741 -> 00: 43: 00410

<i> At that time, things became</i>

<i> very scary to us.</i>

在那个时候，对于我们来讲，事情会变得非常可怕。

779

00: 43: 00412 -> 00: 43: 02912

---

<i> Here you had malware</i>  
<i> potentially killing people</i>  
在这里，你所掌握的恶意软件可能会杀人

780  
00: 43: 02914 -> 00: 43: 05214  
and that was something that was  
always Hollywood-esque to us  
事情可能会像好莱坞电影中的那样充满戏剧性。

781  
00: 43: 05216 -> 00: 43: 06382  
that we'd always laugh at

782  
00: 43: 06384 -> 00: 43: 08418  
when people made  
that kind of assertion.  
我们总是会嘲笑人们发表那种声明。

783  
00: 43: 14024 -> 00: 43: 16526  
Gibney:<i> At this point, you had</i>  
<i> to have started developing</i>

784  
00: 43: 16528 -> 00: 43: 19295  
<i> theories as to</i>  
<i> who had built stuxnet.</i>  
吉布尼：在这一点上，你需要开始拓展有关谁构建了 Stuxnet 病毒的理论。

785  
00: 43: 20230 -> 00: 43: 21798  
It wasn't  
lost on us that

786  
00: 43: 21800 -> 00: 43: 25034  
there were probably  
only a few countries

787  
00: 43: 25036 -> 00: 43: 27370  
in the world that would want

---

788

00: 43: 27372 -> 00: 43: 30239

and have the motivation

to sabotage

这件事并没有让我们迷失方向，在这个世界上，有可能只有少数国家有动机想破坏

789

00: 43: 30241 -> 00: 43: 32375

Iran's nuclear enrichment

facility.

伊朗的核浓缩设施。

790

00: 43: 32377 -> 00: 43: 34277

The U.S. government

would be up there.

美国政府

就在那里。

791

00: 43: 34279 -> 00: 43: 36446

Israeli government certainly

would be... would be up there.

以色列政府肯定

会.....会在那里。

792

00: 43: 36448 -> 00: 43: 38548

You know, maybe u.K.,

France, Germany,

你知道，也许英国、法国、德国，

793

00: 43: 38550 -> 00: 43: 39983

those sorts of countries,

那些五花八门的国家，

794

00: 43: 39985 -> 00: 43: 42285

but we never found any

information that

795

---

00: 43: 42287 -> 00: 43: 45321

would tie it back 100 percent

to... to those countries.

但我们从来没有发现有任何信息会 100%的反馈回这些国家中。

796

00: 43: 45323 -> 00: 43: 47256

There are no telltale signs.

没有蛛丝马迹。

797

00: 43: 47258 -> 00: 43: 49826

You know, the attackers don't

leave a message inside

要知道，攻击者不会在里面留下任何一条消息

798

00: 43: 49828 -> 00: 43: 51995

saying, you know,

"it was me."

说，你知道，“这就是我。”

799

00: 43: 52896 -> 00: 43: 56165

And even if they did,

all of that stuff can be faked.

即使他们做到了，所有的原料都能够被伪造

800

00: 43: 56,500 -> 00: 43: 59168

So it's very, very difficult

to do attribution

801

00: 43: 59170 -> 00: 44: 00903

when looking at

computer code.

所以当我们看计算机代码的时候，去做归属是非常困难的。

802

00: 44: 01772 -> 00: 44: 03306

Gibney: Subsequent work

that's been done

吉布尼：已经完成的后续工作

803

00: 44: 03308 -> 00: 44: 05742

leads us to believe that  
this was the work of

804

00: 44: 05744 -> 00: 44: 07276

a collaboration between Israel  
and the United States.  
使我们相信，以色列和美国之间存在的合作。

805

00: 44: 07278 -> 00: 44: 08344

Yeah, yeah.  
是啊。

806

00: 44: 08346 -> 00: 44: 09479

Gibney: Did you have  
any evidence

807

00: 44: 09481 -> 00: 44: 10747

in terms of your analysis

808

00: 44: 10,749 -> 00: 44: 12749

that would lead you  
to believe that

809

00: 44: 12,751 -> 00: 44: 14083

that's correct also?  
吉布尼：在分析方面，你有任何证据来使你相信这是正确的吗？

810

00: 44: 14085 -> 00: 44: 16185

Nothing that I could  
talk about on camera.  
私下里我没什么好说的。

811

00: 44: 17688 -> 00: 44: 20,490

---

Gibney:

Well, can I ask why?

吉布尼:

好吧，我可以问为什么吗？

812

00: 44: 20492 -> 00: 44: 22325

No.

不可以。

813

00: 44: 22,327 -> 00: 44: 24027

Well, you can,

but I won't answer.

嗯，你可以问，但我不会回答。

814

00: 44: 26464 -> 00: 44: 28765

Gibney: But even in the case

of nation-states,

吉布尼：但是，即使是在这样一个民主国家，

815

00: 44: 28767 -> 00: 44: 30266

I mean, one of

the concerns is...

我的意思是，顾虑之一是...

816

00: 44: 30268 -> 00: 44: 32402

Gibney:<i> This was beginning</i>

<i> to really piss me off.</i>

吉布尼：这是真正开始让我反感的。

817

00: 44: 32,836 -> 00: 44: 36172

<i>Even civilians with an interest</i>

<i> in telling the stuxnet story</i>

即使对震网病毒故事有兴趣的老百姓

818

00: 44: 36174 -> 00: 44: 39108

<i> were refusing to address</i>

<i> the role of Tel Aviv</i>

819

00: 44: 39110 -&gt; 00: 44: 42345

&lt;i&gt; and Washington.&lt;/i&gt;

&lt;i&gt; But luckily for me,&lt;/i&gt;

也会拒绝承认特拉维夫和华盛顿的作用。

但对我来说，幸运的是，

820

00: 44: 42613 -&gt; 00: 44: 44447

&lt;i&gt; while D.C.&lt;/i&gt;

&lt;i&gt; is a city of secrets,&lt;/i&gt;

然而华盛顿特区，作为秘密之城，

821

00: 44: 44782 -&gt; 00: 44: 46549

&lt;i&gt; it is also a city of leaks.&lt;/i&gt;

它也是泄密之城。

822

00: 44: 47017 -&gt; 00: 44: 48718

&lt;i&gt; They're as regular as&lt;/i&gt;

&lt;i&gt; a heartbeat&lt;/i&gt;

823

00: 44: 48720 -&gt; 00: 44: 50453

&lt;i&gt; and just as hard to stop.&lt;/i&gt;

它们像正常心跳一样，很难停下来。

824

00: 44: 51455 -&gt; 00: 44: 53022

&lt;i&gt; That's what I was counting on.&lt;/i&gt;

那就是我所期望的。

825

00: 44: 58196 -&gt; 00: 45: 01731

&lt;i&gt; Finally, after speaking to a&lt;/i&gt;

&lt;i&gt; number of people on background,&lt;/i&gt;

最后，在后台对一些人说的话，

826

00: 45: 01733 -&gt; 00: 45: 04333

&lt;i&gt; I did find a way of confirming,&lt;/i&gt;

&lt;i&gt; on the record,&lt;/i&gt;

827

00: 45: 04335 -&gt; 00: 45: 06202

&lt;i&gt; the American role in stuxnet.&lt;/i&gt;

我通过记录找到了一种可以确认美国在震网病毒事件中所扮演角色的方式。

828

00: 45: 07171 -&gt; 00: 45: 09305

&lt;i&gt; In exchange for details&lt;/i&gt;

&lt;i&gt; of the operation,&lt;/i&gt;

为了得到交换细节的操作，

829

00: 45: 09307 -&gt; 00: 45: 11374

&lt;i&gt; I had to agree to find a way&lt;/i&gt;

我不得不同意找到一种方法

830

00: 45: 11,376 -&gt; 00: 45: 13676

&lt;i&gt; to disguise the source&lt;/i&gt;

&lt;i&gt; of the information.&lt;/i&gt;

来伪装成信息源。

831

00: 45: 13,678 -&gt; 00: 45: 15445

- Gibney:&lt;i&gt; We're good?&lt;/i&gt;

- Man:&lt;i&gt; We're on.&lt;/i&gt;

吉布尼：我们棒吗？

男子：我们棒。

832

00: 45: 17014 -&gt; 00: 45: 18681

Gibney:&lt;i&gt; So the first question&lt;/i&gt;

&lt;i&gt; I have to ask you&lt;/i&gt;

吉布尼：那么我要问你的第一个问题

833

00: 45: 18683 -&gt; 00: 45: 20083

&lt;i&gt; is about secrecy.&lt;/i&gt;

是关于秘密的。

834

00: 45: 20584 -&gt; 00: 45: 23653

<i> I mean, at this point,</i>  
<i> everyone knows about stuxnet.</i>  
我的意思是，在这一点上，  
每个人都听说过震网（Stuxnet）病毒。

835

00: 45: 23655 -&gt; 00: 45: 25321

<i> Why can't we talk about it?</i>  
为什么我们不能谈论它呢？

836

00: 45: 25823 -&gt; 00: 45: 27190

<i> It's a covert operation.</i>  
因为这是一个秘密行动。

837

00: 45: 27,192 -&gt; 00: 45: 28991

Gibney:<i> Not anymore.</i>  
吉布尼：现在不一样了。

838

00: 45: 28993 -&gt; 00: 45: 31294

<i> I mean, we know what happened,</i>  
<i> we know who did it.</i>  
我的意思是，我们知道发生了什么，  
我们知道这是谁做的。

839

00: 45: 31528 -&gt; 00: 45: 34230

<i> Well, maybe you don't know</i>  
<i> as much as you think you know.</i>  
好的，也许正如你所知道的那样你并不知道。

840

00: 45: 35032 -&gt; 00: 45: 37600

Gibney:<i> Well, I'm talking to you</i>  
<i> because I want to</i>  
吉布尼：嗯，我跟你聊天是因为我想

841

00: 45: 37602 -&gt; 00: 45: 39001

<i> get the story right.</i>  
获得故事的版权。

---

842

00: 45: 39003 -&gt; 00: 45: 40737

&lt;i&gt; Well, that's the same reason&lt;/i&gt;

&lt;i&gt; I'm talking to you.&lt;/i&gt;

嗯，正是同样的原因，我正和你谈着话。

843

00: 45: 43207 -&gt; 00: 45: 45007

Gibney:&lt;i&gt; Even though it's&lt;/i&gt;

&lt;i&gt; a covert operation?&lt;/i&gt;

吉布尼：尽管这是秘密行动？

844

00: 45: 46043 -&gt; 00: 45: 49879

&lt;i&gt; Look, this is not&lt;/i&gt;

&lt;i&gt; a snowden kind of thing, okay?&lt;/i&gt;

你看，这并不是斯诺登一类的事情，好吗？

845

00: 45: 49881 -&gt; 00: 45: 51214

&lt;i&gt; I think what he did&lt;/i&gt;

&lt;i&gt; was wrong.&lt;/i&gt;

我觉得他做的事情是错的。

846

00: 45: 51216 -&gt; 00: 45: 54350

&lt;i&gt; He went too far.&lt;/i&gt;

&lt;i&gt; He gave away too much.&lt;/i&gt;

他走的太远了。

他一语道破太多了。

847

00: 45: 54852 -&gt; 00: 45: 56853

&lt;i&gt; Unlike snowden,&lt;/i&gt;

&lt;i&gt; who was a contractor,&lt;/i&gt;

与斯诺登不同，

谁是立约人，

848

00: 45: 56855 -&gt; 00: 45: 58621

&lt;i&gt; I was in NSA.&lt;/i&gt;

我在国安局。

849

00: 45: 59256 -> 00: 46: 01457

<i> I believe in the agency,</i>  
<i>so what I'm willing to give you</i>  
我相信国安局，  
所以我很愿意告诉你

850

00: 46: 01459 -> 00: 46: 03092

<i> will be limited,</i>  
<i> but we're talking</i>  
即便这些是受限制的，  
但我们谈论

851

00: 46: 03094 -> 00: 46: 04927

<i> because everyone's getting</i>  
<i> the story wrong</i>  
因为每个人所听到的故事都是错的

852

00: 46: 04929 -> 00: 46: 06529

<i> and we have to get it right.</i>  
我们有权利知道它。

853

00: 46: 06531 -> 00: 46: 08297

<i> We have to understand</i>  
<i> these new weapons.</i>  
我们必须了解这些新式武器。

854

00: 46: 08299 -> 00: 46: 09565

<i> The stakes are too high.</i>  
赌注太高。

855

00: 46: 09567 -> 00: 46: 10867

Gibney:<i> What do you mean?</i>  
吉布尼：你这是什么意思？

856

00: 46: 12970 -> 00: 46: 149??37

<i> We did stuxnet.</i>  
我们编写了震网蠕虫（Stuxnet）。

857

00: 46: 16,140 -&gt; 00: 46: 17306

&lt;i&gt; It's a fact.&lt;/i&gt;

这是事实。

858

00: 46: 17,308 -&gt; 00: 46: 21043

&lt;i&gt; You know, we came&lt;/i&gt;

&lt;i&gt; so fucking close to disaster,&lt;/i&gt;

你知道，我们他妈的离灾难如此之近，

859

00: 46: 21045 -&gt; 00: 46: 22,712

&lt;i&gt; and we're still on the edge.&lt;/i&gt;

而且我们仍处在边缘。

860

00: 46: 24248 -&gt; 00: 46: 29318

&lt;i&gt; It was a huge multinational,&lt;/i&gt;

&lt;i&gt; interagency operation.&lt;/i&gt;

这是一个巨大的跨国、跨部门的机构。

861

00: 46: 30587 -&gt; 00: 46: 33289

&lt;i&gt; In the U.S. it was CIA,&lt;/i&gt;

在美国它被称为 CIA（中央情报局）、

862

00: 46: 33757 -&gt; 00: 46: 37226

&lt;i&gt; NSA, and the military&lt;/i&gt;

&lt;i&gt; cyber command.&lt;/i&gt;

、国安局（NSA）和军队网络司令部。

863

00: 46: 37728 -&gt; 00: 46: 41397

&lt;i&gt; From Britain, we used&lt;/i&gt;

&lt;i&gt; Iran intel out of GCHQ,&lt;/i&gt;

来自英国，我们曾使用伊朗英特尔出的 GCHQ，

864

00: 46: 41999 -&gt; 00: 46: 43833

&lt;i&gt; but the main partner&lt;/i&gt;

&lt;i&gt; was Israel.&lt;/i&gt;

但主要的合作伙伴是以色列。

865

00: 46: 43835 -> 00: 46: 45334

<i> Over there,</i>

<i> Mossad ran the show,</i>

在那里，摩萨德（以色列情报和特殊使命局）跑展会，

866

00: 46: 45336 -> 00: 46: 48070

<i> and the technical work</i>

<i> was done by unit 8200.</i>

同时技术工作则由 8200 个成员完成。

867

00: 46: 49006 -> 00: 46: 52008

<i> Israel is really the key</i>

<i> to the story.</i>

以色列才是这个故事的关键。

868

00: 46: 56446 -> 00: 46: 59515

Melman: Oh, traffic in Israel

is so unpredictable.

梅尔曼：噢，以色列的交通状况是如此不可预测！

869

00: 47: 01618 -> 00: 47: 04687

Gibney: Yossi, how did you get

into this whole stuxnet story?

吉布尼：尤西，你是怎么得到整个震网（Stuxnet）故事的？

870

00: 47: 05856 -> 00: 47: 08858

I have been covering

the Israeli intelligence

871

00: 47: 08860 -> 00: 47: 11,160

in general, in the Mossad

in particular

872

00: 47: 11,162 -> 00: 47: 14564

---

<i> for nearly 30 years.</i>

在一般情况下，在摩萨德，  
尤其是近 30 年，我一直雪藏着以色列的情报。

873

00: 47: 14965 -> 00: 47: 18034

<i> In '82, I was a London-based</i>

<i> correspondent</i>

在 1982 年，我是一名总部设在伦敦的记者。

874

00: 47: 18036 -> 00: 47: 21470

<i> and I covered a trial</i>

<i> of terrorists,</i>

我的报道涵盖了审判、恐怖分子，

875

00: 47: 21472 -> 00: 47: 25775

<i> and I became more familiar</i>

<i> with this topic of terrorism,</i>

我对恐怖主义这一主题变得更加熟悉，

876

00: 47: 25777 -> 00: 47: 29946

<i> and slowly but surely, I</i>

<i> started covering it as a beat.</i>

慢慢的，我的脚步变得缓慢而坚定，我开始小心翼翼的工作。

877

00: 47: 32816 -> 00: 47: 35852

Israel, we live in

a very rough neighborhood

在以色列，我们住在一个非常简陋的邻居家里。

878

00: 47: 35854 -> 00: 47: 38221

where the...

The Democratic values,

在那里...

民主价值观、

879

00: 47: 38223 -> 00: 47: 41524

western values, are very rare.

西方的价值观，都是非常罕见的。

880

00: 47: 41959 -> 00: 47: 45862

But Israel pretends

to be a free, Democratic,

但以色列假装成一个自由、民主、

881

00: 47: 45864 -> 00: 47: 47930

westernized society,

西化的社会，

882

00: 47: 48398 -> 00: 47: 51,701

<i> posh neighborhoods,</i>

<i> rich people,</i>

豪华社区、有钱人、

883

00: 47: 51869 -> 00: 47: 54871

<i> youngsters who are having</i>

884

00: 47: 54873 -> 00: 47: 57907

<i> almost similar mind-set</i>

<i> to their American</i>

885

00: 47: 57909 -> 00: 48: 00142

<i> or western European</i>

<i> counterparts.</i>

年轻人都有着与美国、西欧青少年几乎相同的思维模式。

886

00: 48: 00144 -> 00: 48: 02879

<i> On the other hand,</i>

<i> you see a lot of scenes</i>

另一方面，你能看到很多场景

887

00: 48: 02881 -> 00: 48: 07083

<i> and events which resemble</i>

<i> the real middle east,</i>

---

和类似的真正中东事件，

888

00: 48: 07085 -> 00: 48: 12855

<i> terror attacks, s,</i>

<i> fanatics, religious zealots.</i>

恐怖袭击、激进分子、狂热分子和宗教狂热者。

889

00: 48: 17,228 -> 00: 48: 20329

I knew that Israel

is trying to slow down

我知道以色列正在试图减缓

890

00: 48: 20331 -> 00: 48: 21998

Iran's nuclear program,

伊朗的核计划进程，

891

00: 48: 22000 -> 00: 48: 24,767

and therefore,

i came to the conclusion that

因此，

我得出的结论是

892

00: 48: 24769 -> 00: 48: 27937

if there was a virus

infecting Iran's computers,

如果有一个病毒感染了伊朗的电脑，

893

00: 48: 27939 -> 00: 48: 33743

it's... it's one more element

in... in this larger picture

在这张大图中，这是……这是一个更加多元化的

894

00: 48: 34444 -> 00: 48: 36879

<i> based on past precedents.</i>

根据以往的先例，在这张大图中，这是……这是一个更加多元化的场景。

895

---

00: 48: 41452 -> 00: 48: 4512??1

Yadlin:

<i> 1981 I was an f-16 pilot,</i>

Yadlin:

1981年的时候，我是一架 F-16 战斗机飞行员，

896

00: 48: 45555 -> 00: 48: 49058

<i> and we were told that,</i>

<i> unlike our dream</i>

我们被告知，

不像我们的梦想那样

897

00: 48: 49060 -> 00: 48: 52495

<i> to do dogfights</i>

<i> and to kill migs,</i>

会做缠斗、会和米格机厮杀，

898

00: 48: 53063 -> 00: 48: 56699

<i> we have to be prepared</i>

<i> for a long-range mission</i>

我们必须为远程任务做好准备

899

00: 48: 57367 -> 00: 49: 00002

<i>to destroy a valuable target.</i>

去摧毁一个有价值的目标。

900

00: 49: 00771 -> 00: 49: 02471

<i> Nobody told us what is</i>

没有人告诉我们什么是

901

00: 49: 02473 -> 00: 49: 04874

<i> this very valuable</i>

<i> strategic target.</i>

是非常有价值的战略目标。

902

00: 49: 05876 -> 00: 49: 09045

<i> It was 600 miles from Israel.</i>

---

这距离以色列 600 英里。

903

00: 49: 10414 -> 00: 49: 13883

So we train our self

to do the job,

因此，我们训练我们自己所做的工作，

904

00: 49: 13885 -> 00: 49: 17720

which was very difficult.

No air refueling at that time.

这是非常困难的。

在那个时候，没有空中加油。

905

00: 49: 18121 -> 00: 49: 20189

No satellites

for reconnaissance.

没有卫星进行侦察。

906

00: 49: 22,125 -> 00: 49: 24527

Fuel was on the limit.

燃油是有限的。

907

00: 49: 25095 -> 00: 49: 27396

Pilot:<i> What?</i>

<i> Whoa! Whoa!</i>

飞行员：什么？

哇！哇！

908

00: 49: 30334 -> 00: 49: 31,734

Yadlin:<i> At the end of the day,</i>

亚德林：在一天结束时，

909

00: 49: 32469 -> 00: 49: 34203

<i> we accomplished</i>

<i> the mission.</i>

我们完成了使命。

910

00: 49: 34,671 -&gt; 00: 49: 35,972

Gibney:&lt;i&gt; Which was?&lt;/i&gt;

吉布尼：什么使命？

911

00: 49: 36440 -&gt; 00: 49: 39342

Yadlin:&lt;i&gt; To destroy&lt;/i&gt;

&lt;i&gt; the Iraqi nuclear reactor&lt;/i&gt;

Yadlin：摧毁伊拉克核反应堆。

912

00: 49: 39344 -&gt; 00: 49: 43179

&lt;i&gt; near Baghdad,&lt;/i&gt;

&lt;i&gt; which was called osirak.&lt;/i&gt;

在巴格达附近，

有个叫奥斯拉克的地方。

913

00: 49: 43413 -&gt; 00: 49: 49452

And Iraq never was able

to accomplish

伊拉克从来就没能完成

914

00: 49: 49454 -&gt; 00: 49: 52021

its ambition to have

a nuclear bomb.

它制造核弹的野心。

915

00: 49: 54024 -&gt; 00: 49: 56625

Melman:&lt;i&gt; Amos yadlin,&lt;/i&gt;

&lt;i&gt; general yadlin,&lt;/i&gt;

梅尔曼：阿莫斯亚德林，一般称为亚德林，

916

00: 49: 56627 -&gt; 00: 49: 59428

&lt;i&gt; he was the head&lt;/i&gt;

&lt;i&gt; of the military intelligence.&lt;/i&gt;

他是军事情报机构的头。

917

00: 49: 59830 -&gt; 00: 50: 03299

<i> The biggest unit</i>

<i> within that organization</i>

在该组织内，最大的单位

918

00: 50: 03301 -> 00: 50: 05101

<i> was unit 8200.</i>

是单位 8200。

919

00: 50: 05802 -> 00: 50: 08204

<i> They'd block telephones,</i>

<i> they'd block faxes,</i>

他们会阻止通话，

他们会阻止收发传真，

920

00: 50: 08206 -> 00: 50: 10373

<i> they're breaking</i>

<i> into computers.</i>

他们入侵到电脑中。

921

00: 50: 12,709 -> 00: 50: 15,011

<i> A decade ago,</i>

<i> when yadlin became</i>

十年前，

当亚德林成为了

922

00: 50: 15013 -> 00: 50: 16946

<i> the chief of</i>

<i> military intelligence,</i>

首席军事情报长官时，

923

00: 50: 17447 -> 00: 50: 21951

<i> there was no</i>

<i> cyber warfare unit in 8200.</i>

在 8200，当时并没有网络战单位。

924

00: 50: 24888 -> 00: 50: 28657

<i> So they started recruiting</i>

<i> very talented people,</i>  
于是，他们开始招募很有才华的人，

925

00: 50: 28659 -> 00: 50: 31227

<i> hackers either</i>

<i> from the military</i>

甚至是来自于军方的黑客

926

00: 50: 31229 -> 00: 50: 33796

or outside the military

that can contribute

927

00: 50: 33798 -> 00: 50: 36966

to the project of building

a cyber warfare unit.

或者是有助于建设网络战单位的非军方人员。

928

00: 50: 39703 -> 00: 50: 44206

Yadlin:<i> In the 19th century,</i>

<i> there were only army and Navy.</i>

亚德林：在 19 世纪，我们只有陆军和海军。

929

00: 50: 44208 -> 00: 50: 48010

<i> In the 20th century,</i>

<i> we got air power</i>

930

00: 50: 48012 -> 00: 50: 49745

<i> as a third dimension of war.</i>

到了 20 世纪，我们拥有了作为战争第三个维度的空中力量。

931

00: 50: 50380 -> 00: 50: 52348

<i> In the 21st century,</i>

在 21 世纪，

932

00: 50: 52350 -> 00: 50: 55885

<i> cyber will be</i>

<i> the fourth dimension of war.</i>

网络将成为战争的第四维度。

933

00: 50: 56853 -> 00: 50: 58387

<i> It's another kind of weapon</i>

它是另一种武器

934

00: 50: 58389 -> 00: 51: 02992

and it is for unlimited range

in a very high speed

935

00: 51: 03393 -> 00: 51: 05528

and in

a very low signature.

并且它以非常快的速度和非常低的识别标志在无线范围内活动。

936

00: 51: 05530 -> 00: 51: 08064

So this give you

a huge opportunity...

所以这给了你一个巨大的机会...

937

00: 51: 09166 -> 00: 51: 12435

<i> And the superpowers</i>

<i> have to change</i>

938

00: 51: 12437 -> 00: 51: 14503

<i> the way we think</i>

<i> about warfare.</i>

超级大国必须改变对战争的思维方式。

939

00: 51: 16741 -> 00: 51: 18774

Finally we are transforming

our military

940

00: 51: 18776 -> 00: 51: 21,444

for a new kind of war

that we're fighting now...

最后，我们正在为目前正在进行中的一种新类型的战争改变着我们的军队……

941

00: 51: 22913 -> 00: 51: 24346

And for wars of tomorrow.

同时也为了明天的战争而改变。

942

00: 51: 25682 -> 00: 51: 27783

<i> We have made our military</i>

<i> better trained,</i>

我们已经使我们的军队得到了更好的培训，

943

00: 51: 27785 -> 00: 51: 30686

<i> better equipped,</i>

<i> and better prepared</i>

配备了更好的装备，

得到了更好的保障。

944

00: 51: 30688 -> 00: 51: 33456

<i> to meet the threats</i>

<i> facing America today</i>

945

00: 51: 33458 -> 00: 51: 35691

<i> and tomorrow</i>

<i> and long in the future.</i>

来应对美国在今天、明天或更远的将来所面临的威胁。

946

00: 51: 39463 -> 00: 51: 42098

Sanger:<i> Back in the end</i>

<i> of the bush administration,</i>

桑格：回到布什政府执政的末期，

947

00: 51: 42,100 -> 00: 51: 44033

<i> people within</i>

<i> the U.S. government</i>

美国政府内部的人

948

---

00: 51: 44035 -> 00: 51: 47236

<i> were just beginning</i>

<i> to convince president bush</i>

正开始说服布什总统

949

00: 51: 47238 -> 00: 51: 50139

to pour money into

offensive cyber weapons.

将资金投入到了进攻性网络武器的研发中。

950

00: 51: 51108 -> 00: 51: 54143

<i> Stuxnet started off</i>

<i> in the defense department.</i>

震网蠕虫（Stuxnet）在国防部启程。

951

00: 51: 54811 -> 00: 51: 57113

<i> Then Robert gates,</i>

<i> secretary of defense,</i>

然后国防部长罗伯特·盖茨，

952

00: 51: 57581 -> 00: 51: 59748

<i> reviewed this program</i>

<i> and he said,</i>

回顾了这一程序，然后说道，

953

00: 51: 59,750 -> 00: 52: 01951

<i> "this program shouldn't be</i>

<i> in the defense department.</i>

“这个程序不应该在国防部中被执行。”

954

00: 52: 01953 -> 00: 52: 04453

<i> This should really be under</i>

<i> the covert authorities</i>

955

00: 52: 04455 -> 00: 52: 06288

<i> over in</i>

<i> the intelligence world."</i>

这确实应该在属于情报世界的保密局控制之下。”

956

00: 52: 07257 -> 00: 52: 10,392

<i> So the CIA was</i>

<i> very deeply involved</i>

957

00: 52: 10394 -> 00: 52: 11861

<i> in this operation,</i>

所以，在此操作中，中情局非常深入的参与了其中

958

00: 52: 12162 -> 00: 52: 14,797

<i> while much of</i>

<i> the coding work was done</i>

959

00: 52: 14,799 -> 00: 52: 17199

<i> by the</i>

<i> national security agency</i>

960

00: 52: 17,400 -> 00: 52: 20469

<i> and unit 8200,</i>

<i> its Israeli equivalent,</i>

961

00: 52: 20471 -> 00: 52: 24306

<i> working together with a newly</i>

<i> created military position</i>

962

00: 52: 24308 -> 00: 52: 26642

<i> called U.S. cyber command.</i>

而大部分的编码工作已经由国家安全局和单位 8200 完成了，与以色列对应机构一起工作的部门，以其初创的军事地位被称为“美国网络司令部”。

963

00: 52: 27444 -> 00: 52: 31647

<i>And interestingly, the director</i>

<i>of the national security agency</i>

有趣的是，国家安全局的局长

964

00: 52: 31649 -&gt; 00: 52: 34250

would also have

a second role

director

也会有另一个角色

965

00: 52: 34252 -&gt; 00: 52: 37987

as the commander

of U.S. cyber command.

作为美国网络司令部的指挥官。

966

00: 52: 38455 -&gt; 00: 52: 42124

&lt;i&gt; And U.S. cyber command&lt;/i&gt;

&lt;i&gt; is located&lt;/i&gt;

美国网络司令部位于

967

00: 52: 42126 -&gt; 00: 52: 45995

&lt;i&gt; at fort Meade in the&lt;/i&gt;

&lt;i&gt; same building as the NSA.&lt;/i&gt;

与国安局在米德堡的同一栋大楼里。

968

00: 52: 50200 -&gt; 00: 52: 52,234

Col. Gary d. Brown:

&lt;i&gt; I was deployed for a year&lt;/i&gt;

加里上校：我已经部署了一年

969

00: 52: 52502 -&gt; 00: 52: 55671

&lt;i&gt;giving advice on air operations&lt;/i&gt;

&lt;i&gt; in Iraq and Afghanistan,&lt;/i&gt;

在伊拉克和阿富汗，为空运业务提供咨询服务。

970

00: 52: 55673 -&gt; 00: 52: 58507

&lt;i&gt; and when I was returning home&lt;/i&gt;

&lt;i&gt; after that,&lt;/i&gt;

在那之后，当我回国后

971

00: 52: 58509 -> 00: 53: 00509

<i> the assignment I was given</i>

<i> was to go</i>

972

00: 53: 00511 -> 00: 53: 01944

<i> to U.S. cyber command.</i>

我被分配到美国网络司令部。

973

00: 53: 03113 -> 00: 53: 04680

Cyber command is a...

网络司令部是一个...

974

00: 53: 04981 -> 00: 53: 08350

Is the military command

that's responsible for

975

00: 53: 08352 -> 00: 53: 11387

essentially the conducting

of the nation's military affairs

976

00: 53: 11389 -> 00: 53: 12788

in cyberspace.

军事司令部，它实质上是对在网络空间发生的国家军事事件进行控制管理。

977

00: 53: 13290 -> 00: 53: 15691

<i> The stated reason</i>

<i> the United States</i>

978

00: 53: 15693 -> 00: 53: 17,860

<i> decided it needed</i>

<i> a cyber command</i>

979

00: 53: 17862 -> 00: 53: 21063

<i> was because of an event called</i>

<i> operation buckshot yankee.</i>

美国决定成立网络司令部的原因是它是必要的，这是因为所谓的“杨基鹿弹行动”事件。

980

00: 53: 21531 -> 00: 53: 23132

Chris inglis:

<i> In the fall of 2008,</i>

克里斯·英格利斯：在 2008 年的秋天，

981

00: 53: 23134 -> 00: 53: 25968

<i> we found some</i>

<i> adversaries inside</i>

982

00: 53: 25,970 -> 00: 53: 27570

<i> of our classified networks.</i>

在我们的分类网络中，我们发现了存在于里面的敌人。

983

00: 53: 28505 -> 00: 53: 30072

While it wasn't completely true

984

00: 53: 30074 -> 00: 53: 32675

that we always assumed that

we were successful

985

00: 53: 32677 -> 00: 53: 34410

at defending things

at the barrier,

虽然我们始终认为我们在巴里成功捍卫，但事实上这并不完全是真的。

986

00: 53: 34412 -> 00: 53: 36579

at the... at the kind of

perimeter that we might have

987

00: 53: 36581 -> 00: 53: 38581

between our networks

and the outside world,

988

00: 53: 38583 -> 00: 53: 40649

---

there was a large confidence

989

00: 53: 40651 -> 00: 53: 42818

that we'd been

mostly successful.

在我们所拥有的网络和外面的世界之间,对于那种界限存在着巨大的信心——我们已经基本成功啦。

990

00: 53: 43153 -> 00: 53: 44720

But that was a moment in time

when we came to

991

00: 53: 44722 -> 00: 53: 48290

the quick conclusion that it...

It's not really ever secure.

但是,就在那一刻,我们很快得出结论...

这并不是真正的安全。

992

00: 53: 49159 -> 00: 53: 51860

<i> That then accelerated</i>

<i> the department of defense's</i>

993

00: 53: 51862 -> 00: 53: 53429

<i> progress towards</i>

<i> what ultimately</i>

994

00: 53: 53431 -> 00: 53: 54563

<i> became cyber command.</i>

那会加快国防部的发展,最终成立了网络司令部。

995

00: 53: 57867 -> 00: 53: 59068

Good morning.

早上好。

996

00: 54: 00370 -> 00: 54: 01570

Good morning.

---

早上好。

997

00: 54: 01738 -> 00: 54: 03806

Good morning, sir. Cyber has  
one item for you today.

早上好，先生。今天网络上有一个你的项目。

998

00: 54: 04274 -> 00: 54: 05941

Earlier this week,  
antok analysts

本周早些时候，分析师 Antok

999

00: 54: 05943 -> 00: 54: 08277

detected a foreign adversary  
using known methods

检测到一个外部的敌人正使用已知的方法

1000

00: 54: 08279 -> 00: 54: 10112

to access the U.S.  
military network.

访问美国军事网络。

1001

00:54:10,580 --> 00:54:12,181

We identified  
the malicious activity

1002

00:54:12,183 --> 00:54:14,116

via data collected through  
our information assurance

1003

00:54:14,118 --> 00:54:15,618

and signals from  
intelligence authorities

1004

---

00:54:15,620 --> 00:54:17,786

and confirmed

it was a cyber adversary.

我们通过信息保障部门和情报部门收集掌握的数据来看已经确认和证实这次恶意行动是由网络攻击引起的。

1005

00:54:17,788 --> 00:54:20,456

We provided data to our

cyber partners within the dod...

我们已经把数据提供给了国防部的网络合作伙伴...

1006

00:54:20,458 --> 00:54:22,725

You think of NSA

as an institution

1007

00:54:22,727 --> 00:54:25,594

that essentially uses

its abilities in cyberspace

会运用其网络空间的能力去

1008

00:54:25,962 --> 00:54:28,364

to help defend communications

in that space.

你认为美国国家安全局作为一个机构应该保卫该空间的通信。

1009

00:54:28,698 --> 00:54:30,633

<i> Cyber command extends</i>

<i> that capability</i>

1010

00:54:30,635 --> 00:54:34,003

<i> by saying that they will then</i>

<i> take responsibility to attack.</i>

美国网络司令部对外宣称他们在此次攻击负有责任。

1011

00:54:35,472 --> 00:54:38,474

Hayden:<i> NSA has no</i>

---

<i> legal authority to attack.</i>

海登：美国国家安全局无权发动攻击。

1012

00:54:38,476 --> 00:54:40,709

<i> It's never had it,</i>

<i> I doubt that it ever will.</i>

美国国家安全局也从来没有进行过攻击，我一直对此表示怀疑。

1013

00:54:41,211 --> 00:54:43,279

It might explain why

U.S. cyber command

1014

00:54:43,281 --> 00:54:44,980

is sitting out at

fort Meade on top of

1015

00:54:44,982 --> 00:54:46,715

the national security agency,

这或许可以说明为什么美国网络司令部会设在米德堡的国家安全局机构之上。

1016

00:54:46,717 --> 00:54:49,485

because NSA has the abilities

to do these things.

因为国家安全局有能力做这些事情。

1017

00:54:49,786 --> 00:54:52,588

Cyber command has the authority

to do these things.

而网络司令部有做这些事情的权利。

1018

00:54:52,590 --> 00:54:55,824

And "these things" here

refer to the cyber-attack.

这些事情指的就是网络攻击。

1019

---

00:54:55,826 --> 00:54:57,860

This is a huge change

1020

00:54:58,495 --> 00:55:02,164

for the nature of

the intelligence agencies.

就情报机构的性质而言这是一个巨大的变化。

1021

00:55:02,599 --> 00:55:05,401

<i> The NSA was supposed</i>

<i> to be a code-making</i>

1022

00:55:05,403 --> 00:55:07,770

<i> and code-breaking operation</i>

1023

00:55:07,772 --> 00:55:11,940

<i> to monitor the communications</i>

<i> of foreign powers</i>

1024

00:55:11,942 --> 00:55:13,342

<i> and American adversaries</i>

1025

00:55:13,344 --> 00:55:15,678

<i> in the defense</i>

<i> of the United States.</i>

美国国家安全局被指定可以利用新生成的代码和密码破解手法去监控国外势力和针对美国进行防御的反美势力的通信。

1026

00:55:16,179 --> 00:55:19,682

<i> But creating a cyber command</i>

<i> meant using</i>

1027

00:55:19,684 --> 00:55:22,718

<i> the same technology</i>

<i> to do offense.</i>

---

然而，建立一个网络司令部意味着使用相同的技术来进行攻击。

1028

00:55:24,854 --> 00:55:28,857

<i> Once you get inside an</i>

<i> adversary's computer networks,</i>

1029

00:55:28,859 --> 00:55:31,694

<i> you put an implant</i>

<i> in that network.</i>

1030

00:55:31,928 --> 00:55:34,530

<i> And we have tens of thousands</i>

<i> of foreign computers</i>

1031

00:55:34,532 --> 00:55:37,266

<i> and networks that the</i>

<i> United States put implants in.</i>

一旦你进入了敌人的计算机网络，你就可以在对方的网络中植入病毒，已经有成千上万的国外的计算机和网络被美国植入病毒。

1032

00:55:38,034 --> 00:55:41,036

<i> You can use it to monitor</i>

<i> what's going across</i>

1033

00:55:41,038 --> 00:55:43,038

<i>that network and you can use it</i>

1034

00:55:43,040 --> 00:55:46,275

<i> to insert cyber weapons,</i>

<i> malware.</i>

你可以用病毒来监视网络中传输的信息，你也可以用它来插入网络武器，恶意软件。

1035

00:55:47,377 --> 00:55:50,579

If you can spy on a network,

you can manipulate it.

如果你可以窥视网络，你就可以操控它。

1036

00:55:51,281 --&gt; 00:55:53,015

It's already included.

这个已经包含在内。

1037

00:55:53,216 --&gt; 00:55:55,551

The only thing you need is an act of will.

你唯一需要的是要有这种意识。

1038

00:55:59,557 --&gt; 00:56:01,357

NSA source:

&lt;i&gt; I played a role in Iraq.&lt;/i&gt;

国安局资料:

在伊拉克那里，我扮演了一个角色。

1039

00:56:01,359 --&gt; 00:56:03,726

&lt;i&gt; I can't tell you&lt;/i&gt;

&lt;i&gt;whether it was military or not,&lt;/i&gt;

1040

00:56:03,728 --&gt; 00:56:05,327

&lt;i&gt; but I can tell you&lt;/i&gt;

1041

00:56:05,329 --&gt; 00:56:07,663

&lt;i&gt; NSA had combat support teams&lt;/i&gt;

&lt;i&gt; in country.&lt;/i&gt;

我不能告诉你它是否跟军事有关，但是我可以告诉你，国安局在全国各地都有作战支援队。

1042

00:56:09,200 --&gt; 00:56:11,867

&lt;i&gt; And for the first time,&lt;/i&gt;

&lt;i&gt; units in the field&lt;/i&gt;

1043

00:56:11,869 --&gt; 00:56:14,269

&lt;i&gt;had direct access to NSA intel.&lt;/i&gt;

这是作战单位在该领域首次直接访问国家安全局的网络。

1044

00:56:16,841 --> 00:56:18,707

<i> Over time, we thought</i>

<i> more about offense</i>

1045

00:56:18,709 --> 00:56:20,175

<i> than defense, you know,</i>

1046

00:56:20,177 --> 00:56:21,910

<i> more about attacking</i>

<i> than intelligence.</i>

随着时间的推移，我们认为进攻比防守更重要，攻击比情报更重要。

1047

00:56:23,213 --> 00:56:26,248

<i> In the old days, sigint units</i>

<i> would try to track radios,</i>

1048

00:56:26,250 --> 00:56:28,517

<i> but through NSA in Iraq,</i>

1049

00:56:28,519 --> 00:56:30,552

<i> we had access</i>

<i> to all the networks</i>

1050

00:56:30,554 --> 00:56:32,087

<i> going in and out</i>

<i> of the country.</i>

过去，情报机构总是试图追踪无线电信号，但是根据在伊拉克的国家安全局的经验，我们可以随意访问这个国家的所有网络信息。

1051

00:56:32,089 --> 00:56:34,156

<i> And we hoovered up</i>

<i> every text message,</i>

1052

00:56:34,158 --> 00:56:35,657

<i> email, and phone call.</i>

我们可以截获每条文本信息，例如电子邮件、通话记录。

1053

00:56:36,192 --&gt; 00:56:38,594

&lt;i&gt; A complete surveillance state.&lt;/i&gt;

一个全面的监控状态。

1054

00:56:39,496 --&gt; 00:56:43,565

&lt;i&gt; We could find the bad guys,&lt;/i&gt;

&lt;i&gt; say, a gang making ieds,&lt;/i&gt;

1055

00:56:43,567 --&gt; 00:56:47,102

&lt;i&gt; map their networks,&lt;/i&gt;

&lt;i&gt; and follow them in real time.&lt;/i&gt;

我们能够发现敌对武装份子，比方说，一伙人正在制造简易爆炸装置，我们可以绘制他们的网络并实时跟踪他们。

1056

00:56:47,104 --&gt; 00:56:48,404

Soldier:&lt;i&gt; Roger.&lt;/i&gt;

战士：罗杰。

1057

00:56:48,406 --&gt; 00:56:50,205

NSA source:&lt;i&gt; And we could&lt;/i&gt;

&lt;i&gt; lock into cell phones&lt;/i&gt;

1058

00:56:50,207 --&gt; 00:56:52,274

&lt;i&gt; even when they were off&lt;/i&gt;

&lt;i&gt; and send a fake text&lt;/i&gt;

1059

00:56:52,276 --&gt; 00:56:54,710

&lt;i&gt; from a friend,&lt;/i&gt;

&lt;i&gt; suggest a meeting place,&lt;/i&gt;

1060

00:56:54,712 --&gt; 00:56:56,578

&lt;i&gt; and then capture...&lt;/i&gt;

国安局资料：我们可以锁定手机，甚至当他们离开时，冒充朋友的身份来发送假消息，约定一个见面地点，进而实施抓捕.....

1061

00:56:56,580 --&gt; 00:56:57,946

Soldier:&lt;i&gt; 1A, clear to fire.&lt;/i&gt;

战士：1A，瞄准后开火。

1062

00:56:58,415 --&gt; 00:56:59,715

&lt;i&gt; ...or kill.&lt;/i&gt;

.....或者杀死。

1063

00:56:59,717 --&gt; 00:57:00,816

Soldier:&lt;i&gt; Good shot.&lt;/i&gt;

战士：干的漂亮。

1064

00:57:03,853 --&gt; 00:57:06,121

Brown:&lt;i&gt; A lot of the people&lt;/i&gt;

&lt;i&gt; that came to cyber command,&lt;/i&gt;

1065

00:57:06,123 --&gt; 00:57:07,956

&lt;i&gt; the military guys,&lt;/i&gt;

&lt;i&gt; came directly from&lt;/i&gt;

1066

00:57:07,958 --&gt; 00:57:09,958

&lt;i&gt; an assignment&lt;/i&gt;

&lt;i&gt; in Afghanistan or Iraq,&lt;/i&gt;

1067

00:57:09,960 --&gt; 00:57:12,528

&lt;i&gt; 'cause those are the people&lt;/i&gt;

&lt;i&gt; with experience&lt;/i&gt;

1068

00:57:12,530 --&gt; 00:57:14,463

&lt;i&gt; and expertise in operations,&lt;/i&gt;

1069

00:57:14,465 --&gt; 00:57:16,398

and those are the ones you want

looking at this

1070

00:57:16,400 --&gt; 00:57:18,434

to see how

cyber could facilitate

1071

00:57:18,436 --&gt; 00:57:20,669

traditional military operations.

布朗：有很多网络空间司令部和军队的人，是直接从阿富汗和伊拉克战场调来的，这些人都具有实践经验和专业知识，而这些正是你想要从中看到的，即网络是如何支持传统军事行动的。

1072

00:57:32,382 --&gt; 00:57:34,216

NSA source:

&lt;i&gt; Fresh from the surge,&lt;/i&gt;

1073

00:57:34,218 --&gt; 00:57:38,720

&lt;i&gt; I went to work at NSA in '07&lt;/i&gt;

&lt;i&gt; in a supervisory capacity.&lt;/i&gt;

国安局资料：

带着对新环境的新鲜感，我于 2007 年加入了国安局，从事管理工作。

1074

00:57:38,722 --&gt; 00:57:40,889

Gibney:&lt;i&gt; Exactly where&lt;/i&gt;

&lt;i&gt; did you work?&lt;/i&gt;

吉布尼：准确的说，你之前在哪里工作？

1075

00:57:40,891 --&gt; 00:57:42,224

NSA source:&lt;i&gt; Fort Meade.&lt;/i&gt;

国安局资料：米德堡

1076

00:57:42,226 --&gt; 00:57:43,959

&lt;i&gt; You know, I commuted&lt;/i&gt;

&lt;i&gt; to that massive complex&lt;/i&gt;

1077

00:57:43,961 --&gt; 00:57:45,394

&lt;i&gt; every single day.&lt;/i&gt;

你知道，我每天上班都需要通过大量的综合性设备检测。

1078

00:57:46,729 --&gt; 00:57:51,033

&lt;i&gt; I was in tao-s321,&lt;/i&gt;

&lt;i&gt; "the roc."&lt;/i&gt;

我在 tao-s321,

“巨鸟”。

1079

00:57:51,601 --&gt; 00:57:53,669

Gibney:&lt;i&gt; Okay, the tao,&lt;/i&gt;

&lt;i&gt; the roc?&lt;/i&gt;

吉布尼：好吧，tao，“巨鸟”？

1080

00:57:53,837 --&gt; 00:57:57,072

&lt;i&gt; Right, sorry. Tao is&lt;/i&gt;

&lt;i&gt; tailored access operations.&lt;/i&gt;

是的，对不起。Tao 是一种定制访问操作。

1081

00:57:57,074 --&gt; 00:57:59,107

&lt;i&gt; It's where&lt;/i&gt;

&lt;i&gt; NSA's hackers work.&lt;/i&gt;

那是国安局黑客工作的地方。

1082

00:57:59,109 --&gt; 00:58:00,876

&lt;i&gt; Of course,&lt;/i&gt;

&lt;i&gt; we didn't call them that.&lt;/i&gt;

当然，我们不会这样称呼他们。

1083

00:58:01,144 --&gt; 00:58:02,478

Gibney:&lt;i&gt; What did you call them?&lt;/i&gt;

吉布尼：那你们怎么称呼他们？

1084

00:58:02,645 --&gt; 00:58:04,012

NSA source:&lt;i&gt; On net operators.&lt;/i&gt;

国安局资料：网络运营商。

1085

00:58:04,314 --&gt; 00:58:06,849

<i> They're the only people at NSA</i>

<i> allowed to break in</i>

1086

00:58:06,851 --> 00:58:08,350

<i> or attack on the Internet.</i>

在国安局，他们是唯一被授权的可以破坏或攻击互联网的人。

1087

00:58:09,352 --> 00:58:11,453

<i> Inside tao headquarters</i>

<i> is the roc,</i>

1088

00:58:11,455 --> 00:58:13,055

<i> remote operations center.</i>

tao 总部就是“巨鸟”，即远程操作中心。

1089

00:58:13,857 --> 00:58:17,059

<i> If the U.S. government</i>

<i> wants to get in somewhere,</i>

1090

00:58:18,127 --> 00:58:19,528

<i> it goes to the roc.</i>

如果美国政府想要去查看某些地方，就可以去“巨鸟”。

1091

00:58:19,696 --> 00:58:22,564

<i> I mean, we were flooded</i>

<i> with requests.</i>

我的意思是，各种问题如洪水一般包围着我们。

1092

00:58:23,299 --> 00:58:25,834

<i> So many that we could</i>

<i> only do about, mm,</i>

1093

00:58:25,836 --> 00:58:29,004

<i> 30% of the missions that were</i>

<i> requested of us at one time.</i>

很多任务需要我们去完成，在一定时间内，我们只能完成其中的 30%，

1094

00:58:29,006 --> 00:58:30,639

<i> through the web</i>

1095

00:58:30,641 --> 00:58:33,509

<i> but also by hijacking</i>

<i> shipments of parts.</i>

通过网页我们也只能劫持出零件的出货量。

1096

00:58:34,377 --> 00:58:36,378

<i> You know, sometimes the CIA</i>

<i> would assist</i>

1097

00:58:36,380 --> 00:58:39,014

<i> inputting implants</i>

<i> in machines,</i>

1098

00:58:40,216 --> 00:58:42,951

<i> so once inside</i>

<i> a target network,</i>

1099

00:58:43,820 --> 00:58:45,087

<i> we could just...</i>

你知道,有时候中央情报局会协助我们,在计算机中植入病毒,所以一旦进入目标网络内部,我们就可以.....

1100

00:58:46,055 --> 00:58:47,256

<i> Watch...</i>

监视.....

1101

00:58:48,992 --> 00:58:50,559

<i> Or we could attack.</i>

或者我们也能够进行攻击。

1102

00:58:54,364 --> 00:58:57,900

---

<i> Inside NSA was a strange</i>  
<i> kind of culture,</i>

1103

00:58:57,902 --> 00:59:00,302

<i> like,</i>

<i> two parts macho military</i>

1104

00:59:00,304 --> 00:59:04,406

<i> and two parts cyber geek.</i>

<i> I mean, I came from Iraq,</i>

国安局内部有一种奇怪的企业文化，例如，两类军人气概和两种网络极客。我的意思是，我来自伊拉克，

1105

00:59:04,408 --> 00:59:06,308

<i> so I was used to,</i>

<i> "yes, sir. No, sir."</i>

所以，我习惯了，“是的，长官。不，长官。”

1106

00:59:06,310 --> 00:59:08,410

<i> But for the weapons</i>

<i> programmers</i>

1107

00:59:08,412 --> 00:59:10,979

<i> we needed more</i>

<i> "think outside the box" types.</i>

但是对于这些以代码为武器的程序员来说，我们需要的则是更多的“开放思想”。

1108

00:59:11,814 --> 00:59:13,549

<i> From cubicle to cubicle,</i>

1109

00:59:13,551 --> 00:59:16,818

<i> you'd see lightsabers,</i>

<i> tribbles,</i>

1110

00:59:16,820 --> 00:59:18,987

<i> those</i> naruto<i> action figures,</i>

---

1111

00:59:18,989 --&gt; 00:59:21,290

&lt;i&gt; lots of&lt;/i&gt;

aqua teen hunger force.

从一个隔断到隔断，你会看到激光剑、毛球、火影忍者、公仔、大量的零食。

1112

00:59:24,027 --&gt; 00:59:27,629

&lt;i&gt; This one guy,&lt;/i&gt;

&lt;i&gt; they were mostly guys,&lt;/i&gt;

1113

00:59:28,598 --&gt; 00:59:30,732

&lt;i&gt; who liked to wear&lt;/i&gt;

&lt;i&gt; a yellow hooded cape,&lt;/i&gt;

1114

00:59:31,200 --&gt; 00:59:34,803

&lt;i&gt; he used a ton of gray legos&lt;/i&gt;

&lt;i&gt; to build a massive death star.&lt;/i&gt;

这群人，他们大多数是男孩，喜欢穿着黄色的连帽斗篷，他们用很多灰色的积木搭建的死亡行星。

1115

00:59:37,840 --&gt; 00:59:40,008

Gibney:&lt;i&gt; Were they all working&lt;/i&gt;

&lt;i&gt; on stuxnet?&lt;/i&gt;

吉布尼：他们都一直研究震网病毒吗？

1116

00:59:40,577 --&gt; 00:59:42,611

NSA source:

&lt;i&gt; We never called it stuxnet.&lt;/i&gt;

国安局资料：我们从来不叫它震网。

1117

00:59:42,613 --&gt; 00:59:45,380

&lt;i&gt; That was the name invented&lt;/i&gt;

&lt;i&gt; by the antivirus guys.&lt;/i&gt;

那是发现这个病毒的家伙命的名。

1118

00:59:45,382 --&gt; 00:59:47,382

&lt;i&gt; When it hit the papers,&lt;/i&gt;

1119

00:59:47,384 --&gt; 00:59:49,384

&lt;i&gt;we're not allowed to read about&lt;/i&gt;

&lt;i&gt; classified operations,&lt;/i&gt;

1120

00:59:49,386 --&gt; 00:59:50,886

&lt;i&gt; even if it's in&lt;/i&gt;

the New York times.

当它见报时，我们是不允许去阅读关于它的机密报道，即便是在《纽约时代周刊》中。

1121

00:59:50,888 --&gt; 00:59:52,588

&lt;i&gt; We went out of our way&lt;/i&gt;

&lt;i&gt; to avoid the term.&lt;/i&gt;

我们一直采用我们的方式来避免使用术语。

1122

00:59:52,590 --&gt; 00:59:54,523

&lt;i&gt; I mean,&lt;/i&gt;

&lt;i&gt; saying "stuxnet" out loud&lt;/i&gt;

1123

00:59:54,525 --&gt; 00:59:56,692

&lt;i&gt; was like saying "Voldemort"&lt;/i&gt;

&lt;i&gt; in&lt;/i&gt; Harry Potter.

我的意思是，大声说出“震网”就像说《哈利 波特》里的“伏地魔”一样。

1124

00:59:56,694 --&gt; 00:59:58,327

&lt;i&gt; The name that&lt;/i&gt;

&lt;i&gt; shall not be spoken.&lt;/i&gt;

不得用这个名字称呼它。

1125

00:59:58,628 --&gt; 01:00:00,128

Gibney:&lt;i&gt; What did&lt;/i&gt;

&lt;i&gt; you call it then?&lt;/i&gt;

吉布尼：那你们叫它什么？

1126

01:00:08,605 --&gt; 01:00:12,140

&lt;i&gt; The natanz attack,&lt;/i&gt;

&lt;i&gt; and this is out there already,&lt;/i&gt;

1127

01:00:13,042 --> 01:00:17,012

<i> was called</i>

<i> olympic games or og.</i>

“纳坦兹攻击”，也可以称之为“奥运会”或“OG”。

1128

01:00:20,550 --> 01:00:22,985

<i> There was a huge operation</i>

<i> to test the code</i>

1129

01:00:22,987 --> 01:00:25,354

<i> on plcs</i>

<i> here are fort Meade</i>

1130

01:00:25,922 --> 01:00:28,357

<i>and in sandia, new Mexico.</i>

在米德堡、桑迪亚和新墨西哥的 PLC 设备上有大量的测试代码在运行检测。

1131

01:00:30,126 --> 01:00:31,560

<i> Remember during the bush era</i>

1132

01:00:31,562 --> 01:00:33,996

<i> when Libya turned over</i>

<i> all the centrifuges?</i>

还记得在布什时代，利比亚移交了所有的离心机吗？

1133

01:00:34,430 --> 01:00:36,598

<i> Those were the same models</i>

<i> the iranians got</i>

1134

01:00:36,600 --> 01:00:38,900

<i> from a.Q. Khan.</i>

<i> P1's.</i>

伊朗人从 a.Q. Khan. 获得了相同的模型，即 P1's。

1135

---

01:00:40,303 --> 01:00:42,771

<i> We took them to oak Ridge</i>

<i> and used them</i>

我们把它们带到橡树岭，

1136

01:00:42,773 --> 01:00:46,308

<i> to test the code</i>

<i> which demolished the insides.</i>

使用它们来测试这些内部已经拆除的代码。

1137

01:00:47,343 --> 01:00:51,213

<i> At dimona, the Israelis also</i>

<i> tested on the p1's.</i>

在迪莫纳,以色列还在进行 P1 的测试。

1138

01:00:52,649 --> 01:00:55,250

<i> Then, partly by using</i>

<i> our intel on Iran,</i>

1139

01:00:55,252 --> 01:00:58,487

<i> we got the plans for</i>

<i> the newer models, the ir-2's.</i>

那么，其中一部分是在伊朗使用过的 intel 芯片，我们为更新的模型制定了计划模型,ir-2。

1140

01:00:59,355 --> 01:01:01,590

<i> We tried out different</i>

<i> attack vectors.</i>

我们尝试不同的攻击向量。

1141

01:01:01,592 --> 01:01:05,894

<i> We ended up focusing on ways to</i>

<i> destroy the rotor tubes.</i>

我们结束了我们所关注的破坏离心转子管的方法。

1142

01:01:06,796 --> 01:01:10,232

<i> In the tests we ran,</i>

<i> we blew them apart.</i>

我们进行测试，把它们炸成几部分。

1143

01:01:11,701 --> 01:01:13,635

They swept up the pieces,

1144

01:01:13,637 --> 01:01:16,338

they put it on an airplane,

they flew it to Washington,

1145

01:01:16,340 --> 01:01:18,040

they stuck it in the truck,

1146

01:01:18,042 --> 01:01:20,008

they drove it through the gates

of the white house,

1147

01:01:20,010 --> 01:01:24,146

and dumped the shards out

on the conference room table

1148

01:01:24,148 --> 01:01:25,847

in the situation room.

他们清扫了碎片，他们把它放在飞机上，让飞机载着飞到华盛顿，它们被固定在卡车上，他们开车穿过白宫大门，在接待室会议室桌子上倒出碎片。

1149

01:01:25,849 --> 01:01:27,382

And then they invited

president bush

1150

01:01:27,384 --> 01:01:28,950

to come down

and take a look.

然后他们又邀请了布什总统下来看。

1151

---

01:01:28,952 --> 01:01:30,786

And when he could pick up  
the shard

1152

01:01:30,788 --> 01:01:32,554

of a piece of centrifuge...  
当他拿起一块离心机的碎片.....

1153

01:01:33,523 --> 01:01:35,757

He was convinced  
this might be worth it,

1154

01:01:36,059 --> 01:01:37,859

and he said,  
"go ahead and try."  
他深信这是值得的，然后他说，“快去试试。”

1155

01:01:38,695 --> 01:01:41,630

Gibney: Was there legal concern  
inside the bush administration

1156

01:01:41,632 --> 01:01:44,032

that this might be  
an act of undeclared war?  
吉布尼：在布什政府内部有没有法律问题，因为这可能是不宣而战的行

1157

01:01:44,967 --> 01:01:48,737

If there were concerns,  
i haven't found them.  
即使有问题，我也还没发现。

1158

01:01:50,006 --> 01:01:52,674

That doesn't mean that  
they didn't exist

1159

---

01:01:52,676 --> 01:01:54,676

and that some lawyers  
somewhere

1160

01:01:54,678 --> 01:01:56,244

weren't concerned about it,

1161

01:01:56,246 --> 01:01:59,581

but this was

an entirely new territory.

这并不意味着它们不存在，某些地方的某些律师目前还没有关注到它，但是这是一个全新的领域。

1162

01:02:00,183 --> 01:02:02,684

At the time, there were really  
very few people

1163

01:02:02,686 --> 01:02:06,822

who had expertise specifically  
on the law of war and cyber.

当时，真是很少有具有战争法意识和网络方面特长的人。

1164

01:02:07,223 --> 01:02:09,491

And basically what we did was  
looking at, okay,

1165

01:02:09,493 --> 01:02:10,959

here's our broad direction.

基本上我们所做事的就是在看，好的，这就是我们的大方向。

1166

01:02:11,527 --> 01:02:14,129

Now, let's look...

Technically what can we do

现在,让我们看看.....

1167

01:02:14,530 --> 01:02:16,398

---

to facilitate  
this broad direction?  
在这个大方向上，在技术上我们能做些什么来推动？

1168  
01:02:16,666 --> 01:02:19,534  
After that, maybe the...  
I would come in

1169  
01:02:19,536 --> 01:02:22,104  
or one of my lawyers  
would come in and say,  
在那之后，也许.....我会来或者我的一个律师会过来说：

1170  
01:02:22,106 --> 01:02:26,074  
"okay, this is what we may do."  
Okay.  
“好的，这是我们可以做的。”好的。

1171  
01:02:27,177 --> 01:02:28,276  
There are many things  
we can do,

1172  
01:02:28,278 --> 01:02:30,278  
but we are not allowed  
to do them.  
有许多事情我们可以做，但是我们并不被允许去那么做。

1173  
01:02:30,280 --> 01:02:32,414  
And then after that,  
there's still a final level

1174  
01:02:32,416 --> 01:02:34,316  
that we look at and that's,  
what should we do?  
在那之后，仍然有一个最终的级别，  
我们看看，  
我们应该做些什么呢？

---

1175

01:02:34,717 --&gt; 01:02:36,685

Because there are many things  
that would be

1176

01:02:36,687 --&gt; 01:02:39,955

technically possible  
and technically legal

1177

01:02:39,957 --&gt; 01:02:41,490

but a bad idea.

因为在技术上存在很多可行的、合法的事情，却是一个坏主意。

1178

01:02:42,024 --&gt; 01:02:45,727

<i> For natanz,</i>

<i> it was a CIA-led operation,</i>

1179

01:02:45,729 --&gt; 01:02:48,163

<i> so we had to have</i>

<i> agency sign-off.</i>

对于纳坦兹而言，这是中央情报局领导的命令，因此我们必须让中情局签字。

1180

01:02:48,464 --&gt; 01:02:49,631

Gibney:<i> Really?</i>

吉布尼：真的吗？

1181

01:02:49,799 --&gt; 01:02:52,634

<i> Someone from the agency</i>

1182

01:02:53,469 --&gt; 01:02:55,604

<i> stood behind the operator</i>

<i> and the analyst</i>

1183

01:02:55,606 --&gt; 01:02:58,540

<i> and gave the order to launch</i>

<i> every attack.</i>

---

来自这个机构的某些人站在操作员和分析师的身后从而下令发起每一次攻击。

1184

01:03:06,149 --> 01:03:07,983

Chien:<i> Before they had</i>  
<i> even started this attack,</i>

1185

01:03:07,985 --> 01:03:10,218

<i> they put inside of the code</i>  
<i> the kill date,</i>

1186

01:03:10,553 --> 01:03:12,320

<i> a date at which it would stop</i>  
<i> operating.</i>

简：在他们开始攻击之前，他们给代码设置了一个终止日期，这个日期是操作终止的时间。

1187

01:03:12,889 --> 01:03:14,990

O'murchu:<i> Cutoff dates,</i>  
<i>we don't normally see that</i>

1188

01:03:14,992 --> 01:03:16,658

<i> in other threats,</i>  
<i> and you have to think,</i>

1189

01:03:16,660 --> 01:03:18,560

<i> "well, why is there</i>  
<i> a cutoff date in there?"</i>

日期截止时，我们通常不会察觉到其他威胁，  
你必须思考一下，  
“为什么那会有一个截止日期？”

1190

01:03:18,995 --> 01:03:21,429

And when you realize that,  
well, stuxnet was probably

1191

01:03:21,431 --> 01:03:24,633

written by government

---

and that there are laws

1192

01:03:24,635 --> 01:03:27,502

regarding how you can use

this sort of software,

而当你意识到这一点,即震网病毒可能是由政府依据法律并使用这种软件合法生成的。

1193

01:03:27,504 --> 01:03:30,138

that there may have been a legal

team who said, "no, you..."

有可能有一位律师团的人说：“不，你……”

1194

01:03:30,140 --> 01:03:32,340

You need to have

a cutoff date in there,

1195

01:03:32,342 --> 01:03:34,442

and you can only do this

and you can only go that far

你需要截止日期,

你只能这样做

你只能走这么远

1196

01:03:34,444 --> 01:03:36,077

and we need to check

if this is legal or not.

而我们需要检查这是否合法。

1197

01:03:38,114 --> 01:03:41,383

<i> That date is a few days before</i>

<i> Obama's inauguration.</i>

那个日子是奥巴马的就职典礼的前几天。

1198

01:03:42,418 --> 01:03:45,287

<i> So the theory was that</i>

<i> this was an operation</i>

1199

---

01:03:45,289 --> 01:03:47,689

<i> that needed to be stopped</i>

<i> at a certain time</i>

1200

01:03:47,691 --> 01:03:50,091

<i> because there was</i>

<i> gonna be a handover</i>

1201

01:03:50,093 --> 01:03:52,427

<i> and that more approval</i>

<i> was needed.</i>

因此，从理论上讲这是需要在特定时间被停止的操作，因为这会有一个交接，同时需要更多的批准。

1202

01:03:55,666 --> 01:03:57,532

Are you prepared to take

the oath, senator?

你准备好宣誓了吗,参议员?

1203

01:03:57,534 --> 01:03:58,767

I am.

是的。

1204

01:03:59,135 --> 01:04:01,102

I,

Barack Hussein Obama...

我,

巴拉克 侯赛因 奥巴马.....

1205

01:04:01,104 --> 01:04:02,637

- I, Barack...

- Do solemnly swear...

我, 巴拉克.....

庄严宣誓.....

1206

01:04:02,639 --> 01:04:05,240

I, Barack Hussein Obama,  
do solemnly swear...  
我，巴拉克 侯赛因 奥巴马，  
庄严宣誓.....

1207  
01:04:05,441 --> 01:04:08,977  
Sanger:<i> Olympic games was</i>  
<i>reauthorized by president Obama</i>

1208  
01:04:08,979 --> 01:04:10,779  
<i> in his first year in office,</i>  
<i> 2009.</i>

1209  
01:04:15,284 --> 01:04:17,385  
<i> It was fascinating because it</i>  
<i> was the first year of</i>

1210  
01:04:17,387 --> 01:04:19,387  
<i> the Obama administration and</i>  
<i> they would talk to you</i>

1211  
01:04:19,389 --> 01:04:22,190  
<i> endlessly about cyber defense.</i>  
桑格：“奥运会”由奥巴马总统在他任期的第一年即 2009 年重新获得批准，这是很有趣的，因为这一年是奥巴马政府的第一个执政年，他们会跟你无休止地谈论网络防御。

1212  
01:04:22,959 --> 01:04:24,125  
Obama:<i> We count on</i>  
<i> computer networks</i>

1213  
01:04:24,127 --> 01:04:27,262  
<i> to deliver our oil and gas,</i>  
<i> our power, and our water.</i>  
奥巴马：我们依靠计算机网络供应石油、天然气、能源和水。

1214  
01:04:27,563 --> 01:04:30,799

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<i> We rely on them for</i>  
<i> public transportation</i>

1215

01:04:30,801 --> 01:04:32,367

<i> and air traffic control.</i>

我们依赖它们实现对公共交通和航空运输的控制。

1216

01:04:32,735 --> 01:04:34,836

But just as we failed

in the past

1217

01:04:34,838 --> 01:04:36,872

to invest in

our physical infrastructure,

1218

01:04:37,173 --> 01:04:39,541

our roads,

our Bridges, and rails,

1219

01:04:39,876 --> 01:04:41,576

we failed to invest

in the security

1220

01:04:41,578 --> 01:04:43,445

of our digital infrastructure.

但是，正如我们在过去曾失败地投资我们的基础设施，诸如我们的公路、桥梁和铁路，我们曾失败地投资数字基础设施安全。

1221

01:04:43,646 --> 01:04:46,047

Sanger:<i> He was running</i>

<i> east room events</i>

1222

01:04:46,249 --> 01:04:48,984

<i> trying to get people to focus</i>

<i> on the need to</i>

---

1223

01:04:48,986 --> 01:04:50,919

<i> defend cyber networks</i>

1224

01:04:50,921 --> 01:04:52,654

and defend

American infrastructure.

桑格：他以东突事件为例来试图让人们的焦点聚集到捍卫网络安全和捍卫美国基础设施上。

1225

01:04:53,022 --> 01:04:56,558

But when you asked questions

about the use of

1226

01:04:56,560 --> 01:05:00,161

offensive cyber weapons,

everything went dead.

但是，当你询问关于进攻性网络武器的使用问题时，一切都死了。

1227

01:05:00,163 --> 01:05:01,897

No cooperation.

没有合作。

1228

01:05:01,899 --> 01:05:03,999

White house wouldn't help,

Pentagon wouldn't help,

1229

01:05:04,001 --> 01:05:05,166

NSA wouldn't help.

白宫不会帮忙，

五角大楼不愿帮忙，

国家安全局也不会帮忙。

1230

01:05:05,401 --> 01:05:06,835

Nobody would talk to you

about it.

没有人会和你讨论这个。

1231

01:05:07,737 --&gt; 01:05:09,371

&lt;i&gt; But when you dug into&lt;/i&gt;

&lt;i&gt; the budget&lt;/i&gt;

1232

01:05:09,373 --&gt; 01:05:12,607

&lt;i&gt; for cyber spending during&lt;/i&gt;

&lt;i&gt; the Obama administration,&lt;/i&gt;

1233

01:05:12,609 --&gt; 01:05:14,542

&lt;i&gt; what you discovered was&lt;/i&gt;

1234

01:05:14,544 --&gt; 01:05:17,946

&lt;i&gt; much of it was being spent&lt;/i&gt;

&lt;i&gt; on offensive cyber weapons.&lt;/i&gt;

但是，当你去挖掘奥巴马政府执政期间网络开销的预算，你会发现，大部分钱都花在进攻性网络武器上。

1235

01:05:19,749 --&gt; 01:05:24,252

&lt;i&gt; You see phrases like&lt;/i&gt;

&lt;i&gt; "title 10 cno."&lt;/i&gt;

你看这些诸如“标题 10 cno”短语。

1236

01:05:24,687 --&gt; 01:05:27,956

&lt;i&gt; Title 10 means operations&lt;/i&gt;

&lt;i&gt; for the U.S. military,&lt;/i&gt;

1237

01:05:28,224 --&gt; 01:05:32,494

&lt;i&gt; and cno means&lt;/i&gt;

&lt;i&gt; computer network operations.&lt;/i&gt;

标题 10 意味着操控美国军方，cno 意味着计算机网络操作。

1238

01:05:33,195 --&gt; 01:05:34,763

&lt;i&gt; This is considerable evidence&lt;/i&gt;

1239

01:05:34,765 --> 01:05:37,365

that stuxnet was just  
the opening wedge

1240

01:05:38,034 --> 01:05:41,836

of what is a much broader  
U.S. government effort now

1241

01:05:42,271 --> 01:05:45,307

to develop an entire new class  
of weapons.

这毫无疑问证明了震网只是目前美国政府努力更广泛地开发全新武器的一个开始。

1242

01:05:50,880 --> 01:05:53,615

Chien:<i> Stuxnet wasn't just</i>  
<i> an evolution.</i>

1243

01:05:53,617 --> 01:05:56,284

<i> It was really a revolution</i>  
<i> in the threat landscape.</i>

震网不仅仅是演变，它是一场威胁环境中的真正变革。

。

1244

01:05:58,087 --> 01:06:01,056

<i> In the past, the vast majority</i>  
<i> of threats that we saw</i>

1245

01:06:01,058 --> 01:06:03,058

<i> were always controlled by</i>  
<i> an operator somewhere.</i>

在过去，我们看到的威胁绝大多数都是由一个操作员在某处进行控制。

1246

01:06:03,060 --> 01:06:04,759

They would infect  
your machines,

1247

01:06:04,761 --> 01:06:06,594

but they would have what's  
called a callback

1248

01:06:06,596 --> 01:06:08,129

or a command-and-control  
channel.

它们会感染你的计算机，然后它们会进行所谓的回传或命令与控制通道之间的操作。

1249

01:06:08,297 --> 01:06:10,432

The threats would actually  
contact the operator

1250

01:06:10,434 --> 01:06:11,833

and say, what do you want me  
to do next?

这些威胁实际上会与操作员保持联系，并说，“接下来需要我做什么？”

1251

01:06:11,835 --> 01:06:13,401

And the operator would  
send down commands

1252

01:06:13,403 --> 01:06:15,337

<i> and say, maybe, search through</i>

<i> this directory,</i>

1253

01:06:15,339 --> 01:06:17,272

<i> find these folders,</i>

<i> find these files,</i>

1254

01:06:17,274 --> 01:06:19,107

<i> upload these files to me,</i>

<i> spread to this other machine,</i>

操作员会下达命令，也许会说：“通过搜索这个目录，找到一些文件夹或文件，上传这些文件给我，并扩散到其他电脑上。”

1255

01:06:19,109 --> 01:06:20,575

---

<i> things of that nature.</i>

这就是这些事情的本质。

1256

01:06:21,110 --> 01:06:24,179

<i> But stuxnet couldn't have</i>

<i> a command-and-control channel</i>

1257

01:06:24,647 --> 01:06:27,415

because once it got

inside in natanz

1258

01:06:27,417 --> 01:06:30,151

it would not have been able to

reach back out to the attackers.

但震网不可能建立一个指挥控制通道，因为一旦它进入纳坦兹网络里面，它就不可能和攻击者建立联系。

1259

01:06:30,153 --> 01:06:32,454

The natanz network

is completely air gapped

1260

01:06:32,456 --> 01:06:33,655

from the rest of the Internet.

纳坦兹网络与外界互联网是完全隔离的。

1261

01:06:33,657 --> 01:06:35,023

It's not connected to

the Internet.

它不能连接到互联网。

1262

01:06:35,025 --> 01:06:36,491

It's its own isolated network.

这是属于它自己独立的网络。

1263

01:06:36,493 --> 01:06:38,259

Generally, getting across

---

an air gap is...

1264

01:06:38,261 --> 01:06:39,861

Is one of the more difficult  
challenges

1265

01:06:39,863 --> 01:06:42,130

that attackers will face  
just because of the fact that

1266

01:06:42,132 --> 01:06:45,033

there... everything is in place  
to prevent that.

通常，攻击者不得面临这样一个现实，穿过空气间隙是.....是一种更加困难的挑战之一，一切事情都在防御它。

1267

01:06:45,035 --> 01:06:47,602

You know, everything, you know,  
the policies and procedures

1268

01:06:47,604 --> 01:06:49,504

and the physical network  
that's in place is

你知道，每一样东西，政策、法律和物理网络都为了防止入侵而做的专门设计。

1269

01:06:49,506 --> 01:06:52,974

specifically designed to prevent  
you crossing the air gap.

1270

01:06:52,976 --> 01:06:55,443

But there's no  
truly air-gapped network

1271

01:06:55,445 --> 01:06:57,712

in these real-world production  
environments.

---

在这些实际生产环境中，是没有真正能被隔绝的网络的。

1272

01:06:57,714 --> 01:06:59,781

People gotta get new code  
into natanz.

人们开发出新的代码侵入纳坦兹网络。

1273

01:06:59,783 --> 01:07:02,684

People have to get log files off  
of this network in natanz.

人们必须在纳坦兹的网络上把日志文件删除。

1274

01:07:02,686 --> 01:07:04,152

People have to upgrade  
equipment.

人们必须升级设备。

1275

01:07:04,154 --> 01:07:05,854

People have to upgrade  
computers.

人们必须升级计算机系统。

1276

01:07:06,055 --> 01:07:09,190

This highlights  
one of the major

1277

01:07:09,692 --> 01:07:12,627

security issues

that we have in the field.

这凸显了我们在这一领域内的一个主要安全问题。

1278

01:07:12,629 --> 01:07:15,530

If you think,

"well, nobody can attack

1279

01:07:15,532 --> 01:07:17,799

---

this power plant  
or this chemical plant

1280  
01:07:17,801 --> 01:07:19,534  
because it's not connected  
to the Internet,"

1281  
01:07:19,536 --> 01:07:21,403  
that's a bizarre illusion.  
如果你认为，“是啊,没人能攻击这个电厂或者这个化工厂因为它没有连接互联网，”那就是很不现实的想法。

1282  
01:07:25,041 --> 01:07:28,376  
NSA source:<i> The first time we</i>  
<i>introduced the code into natanz</i>

1283  
01:07:28,911 --> 01:07:30,712  
<i> we used human assets,</i>

1284  
01:07:31,580 --> 01:07:35,150  
<i> maybe CIA,</i>  
<i> more likely Mossad,</i>

1285  
01:07:35,152 --> 01:07:38,553  
<i> but our team was kept in</i>  
<i>the dark about the trade craft.</i>  
国安局资料：我们第一次投入了大量的人力资源来在纳坦兹系统中引入代码，也许是美国中央情报局，更有可能的是摩萨德，但我们的团队仍沉浸在交易的黑暗中。

1286  
01:07:39,488 --> 01:07:41,990  
<i> We heard rumors in Moscow,</i>

1287  
01:07:41,992 --> 01:07:45,827  
<i> an iranian laptop infected</i>  
<i> by a phony Siemens technician</i>

---

1288

01:07:45,829 --&gt; 01:07:47,128

*<i> with a flash drive...</i>*

我们听到了来自莫斯科的谣言，假冒的西门子技术人员用闪存盘.....感染了一个伊朗的笔记本电脑

1289

01:07:48,664 --&gt; 01:07:51,800

*<i> A double agent in Iran</i>**<i> with access to natanz,</i>*

1290

01:07:52,368 --&gt; 01:07:54,102

*<i> but I don't really know.</i>*

在伊朗一个双面间谍，可以访问纳坦兹，但我真的不知道。

1291

01:07:54,104 --&gt; 01:07:56,805

*<i> What we had to focus on</i>**<i> was to write the code</i>*

1292

01:07:57,406 --&gt; 01:08:00,842

*<i> so that, once inside,</i>**<i> the worm acted on its own.</i>*

我们所应该做的事就是集中精力写代码，因此，一旦侵入其中，蠕虫就将独自采取行动。

1293

01:08:01,043 --&gt; 01:08:03,411

They built in all the code

and all the logic

1294

01:08:03,413 --&gt; 01:08:06,214

into the threat to be able

to operate all by itself.

它们所构造的所有代码和所有逻辑都能够通过自身进行操作。

1295

01:08:06,216 --&gt; 01:08:08,450

*<i> It had the ability</i>**<i> to spread by itself.</i>*

它能够自我传播。

1296

01:08:08,452 --> 01:08:11,519

<i> It had the ability to figure</i>

<i> out, do I have the right plcs?</i>

它能够计算，自己是否在 PLC 上运行？

1297

01:08:11,521 --> 01:08:14,456

<i> Have I arrived in natanz?</i>

<i> Am I at the target?</i>

进入到纳坦兹系统了吗？

我的目标是这里吗？

1298

01:08:14,458 --> 01:08:16,024

Langner:

<i> And when it's on target,</i>

1299

01:08:16,026 --> 01:08:18,193

<i> it executes autonomously.</i>

兰纳：当它到达目标时，它就会自动执行。

1300

01:08:18,561 --> 01:08:21,863

That also means you...

You cannot call off the attack.

这也意味着你.....

你不可能停止攻击。

1301

01:08:22,531 --> 01:08:24,265

It was definitely the type of attack

1302

01:08:24,867 --> 01:08:26,367

where someone had decided

1303

01:08:27,069 --> 01:08:28,870

that this is what they wanted to do.

这是明确的攻击类型，在这种攻击中有人已经决定了他们想要做什么。

1304

01:08:29,405 --> 01:08:32,207

There was no turning back once stuxnet was released.

一旦震网病毒被释放了，就没有回头路可走。

1305

01:08:37,413 --> 01:08:39,547

When it began to actually execute its payload,

1306

01:08:39,549 --> 01:08:41,816

you would have a whole bunch of centrifuges

1307

01:08:41,818 --> 01:08:44,919

in a huge array of cascades sitting in a big hall.

当它真正开始执行有效载荷时，你将会在大厅里拥有大量级联的离心机。

1308

01:08:44,921 --> 01:08:47,122

And then just off that hall

1309

01:08:47,124 --> 01:08:48,923

you would have an operators room

1310

01:08:48,925 --> 01:08:50,792

the control panels in front of them, a big window

1311

01:08:50,794 --> 01:08:52,227

where they could see into the hall.

然后在大厅你会有一个操作室，在他们面前有控制面板，即一个大的窗口在那。透过窗户，他们能够看到大厅内的状况。

1312

01:08:52,795 --> 01:08:54,996

Computers monitor the activities

1313

01:08:54,998 --> 01:08:56,364

of all these centrifuges.

---

计算机监控着所有这些离心机的活动。

1314

01:08:57,233 --> 01:09:01,302

So a centrifuge, it's driven by an electrical motor.

因此，这样一个离心机，是由电动马达驱动的。

1315

01:09:01,904 --> 01:09:04,806

And the speed of this electrical motor

1316

01:09:04,808 --> 01:09:08,009

is controlled by another plc,

1317

01:09:08,011 --> 01:09:09,711

by another programmable logic controller.

而电动马达的速度是由另一个可编程控制器控制的。

1318

01:09:11,914 --> 01:09:15,617

Chien: Stuxnet would wait for 13 days

1319

01:09:15,619 --> 01:09:16,918

before doing anything,

简：震网蠕虫在做任何事情之前都会等上 13 天，

1320

01:09:16,920 --> 01:09:19,020

because 13 days is about the time it takes

1321

01:09:19,022 --> 01:09:21,990

to actually fill an entire cascade of centrifuges

1322

01:09:21,992 --> 01:09:23,525

with uranium.

因为 13 天正是填满离心机与轴的整个级联所花费的时间。

1323

01:09:23,826 --> 01:09:26,661

They didn't want to attack when the centrifuges essentially

1324

01:09:26,663 --> 01:09:29,030

were empty or at the beginning of the enrichment process.

当离心机基本上是空的或处在浓缩过程的开始阶段时，它们是不想发出攻击的。

1325

01:09:30,299 --> 01:09:32,667

What stuxnet did was it actually would sit there

1326

01:09:32,669 --> 01:09:35,370

during the 13 days and basically record

1327

01:09:35,372 --> 01:09:37,372

all of the normal activities

1328

01:09:37,374 --> 01:09:38,907

that were happening and save it.

震网所要做的事：正因为它实际上会在那里存在 13 天,在这 13 天里会基本上记录了所有发生的正常活动并保存这些信息。

1329

01:09:39,708 --> 01:09:42,043

And once they saw them spinning for 13 days,

一旦它们看到离心机旋转了 13 天,

1330

01:09:42,045 --> 01:09:43,678

then the attack occurred.

那么攻击就会发生。

1331

01:09:44,446 --> 01:09:46,714

Centrifuges spin at incredible speeds,

1332

01:09:46,716 --> 01:09:48,650

about 1,000 hertz.

离心机以难以置信的速度旋转,约 1000 赫兹。

1333

01:09:48,652 --&gt; 01:09:51,019

Langner: They have a safe operating speed,

兰纳: 他们有一个安全的运行速度,

1334

01:09:51,021 --&gt; 01:09:53,855

63,000 revolutions per minute.

63000 转/分钟。

1335

01:09:54,156 --&gt; 01:09:56,724

Chien: Stuxnet caused the uranium enrichment centrifuges

1336

01:09:56,726 --&gt; 01:09:59,027

to spin up to 1,400 hertz.

简: 震网病毒引起的铀浓缩离心机旋转到了 1400 赫兹。

1337

01:09:59,029 --&gt; 01:10:01,763

Langner: Up to 80,000 revolutions per minute.

兰纳: 高达 80000 转/分钟。

1338

01:10:05,234 --&gt; 01:10:07,669

What would happen was those centrifuges

1339

01:10:07,671 --&gt; 01:10:09,938

would go through what's called a resonance frequency.

接下来将要发生的则是这些离心机将经历所谓的共振频率。

1340

01:10:10,472 --&gt; 01:10:12,707

It would go through a frequency at which the metal would

1341

01:10:12,709 --&gt; 01:10:14,576

basically vibrate uncontrollably

1342

01:10:14,578 --&gt; 01:10:15,877

and essentially shatter.

它会经历一个这样的频率，在这个频率下，金属会控制不住地颤动和粉碎。

1343

01:10:16,045 --> 01:10:18,246

There'd be uranium gas everywhere.

会有无处不在的铀气体。

1344

01:10:19,381 --> 01:10:21,249

And then the second attack they attempted

1345

01:10:21,251 --> 01:10:23,551

was they actually tried to lower it to two hertz.

然后它们试图进行第二次攻击，实际上是试图降低 2 赫兹。

1346

01:10:23,553 --> 01:10:27,255

They were slowed down to almost standstill.

它们被放缓到几乎停滞。

1347

01:10:28,023 --> 01:10:30,558

Chien: And at two hertz, sort of an opposite effect occurs.

简:和两个赫兹相反的效果出现了。

1348

01:10:30,560 --> 01:10:32,827

You can imagine a toy top that you spin

1349

01:10:32,829 --> 01:10:35,730

and as the top begins to slow down, it begins to wobble.

你可以想象一下，你旋转一个玩具陀螺，顶部开始慢下来,它开始摇摆。

1350

01:10:35,732 --> 01:10:37,732

That's what would happen to these centrifuges.

什么事情将会发生在这些离心机上。

1351

01:10:37,734 --> 01:10:39,767

They'd begin to wobble and essentially shatter

1352

---

01:10:39,769 --> 01:10:41,002

and fall apart.

它们会开始摇摆,完全粉碎而分崩离析。

1353

01:10:44,774 --> 01:10:47,609

And instead of sending back to the computer

1354

01:10:47,611 --> 01:10:49,244

what was really happening, it would send back

1355

01:10:49,246 --> 01:10:51,212

that old data that it had recorded.

离心机依旧发送旧的记录数据给电脑,而不是将真实情况发送回电脑。

1356

01:10:51,214 --> 01:10:53,014

So the computer's sitting there thinking,

所以电脑还在那里思考,

1357

01:10:53,016 --> 01:10:54,716

"yep, running at 1,000 hertz, everything is fine.

“是的,运行速率在 1000 赫兹,一切都很好。”

1358

01:10:54,718 --> 01:10:56,618

Running at 1,000 hertz, everything is fine."

运行速率在 1000 赫兹,一切都很好。”

1359

01:10:56,620 --> 01:10:59,454

But those centrifuges are potentially spinning up wildly,

但是,这些离心机很有可能正在疯狂的旋转,

1360

01:10:59,456 --> 01:11:01,256

a huge noise would occur

这将会发生巨大的噪音

1361

---

01:11:01,258 --> 01:11:03,258

It'd be like, you know, a jet engine.  
这就像是喷气发动机发动时一样。

1362

01:11:06,796 --> 01:11:08,396

So the operators then would know, "whoa,

1363

01:11:08,398 --> 01:11:10,031

something is going wrong here."  
因此,操作者就知道:“哇,这里出现了一些问题。”

1364

01:11:10,033 --> 01:11:11,966

They might look at their monitors and say, "hmm,  
他们可能会看着他们的显示器并且说:“嗯,

1365

01:11:11,968 --> 01:11:14,435

it says it's 1,000 hertz," but they would hear that in the room

1366

01:11:14,437 --> 01:11:16,237

something gravely bad was happening.  
它是 1000 赫兹,”但是他们在房间里不会知道一些严重的糟糕问题正在发生。

1367

01:11:16,239 --> 01:11:19,607

Not only are the operators fooled into thinking

1368

01:11:19,609 --> 01:11:21,409

everything's normal,

1369

01:11:21,411 --> 01:11:25,747

but also any kind of automated protective logic

1370

01:11:25,749 --> 01:11:27,515

is fooled.  
不仅是操作者会误以为一切正常,而且任何一种自动保护装置也会被其所愚弄。

1371

01:11:28,384 --&gt; 01:11:30,285

Chien: You can't just turn these centrifuges off.

简: 你不能仅仅只是关闭这些离心机。

1372

01:11:30,586 --&gt; 01:11:33,221

They have to be brought down in a very controlled manner.

他们必须被以可控的方式带到我们面前。

1373

01:11:33,223 --&gt; 01:11:35,390

And so they would hit, literally, the big red button

1374

01:11:35,392 --&gt; 01:11:36,991

to initiate a graceful shutdown,

所以从表面上看，他们将按下大的红色按钮来启动正常的关闭，

1375

01:11:37,326 --&gt; 01:11:39,427

and stuxnet intercepts that code.

及通过拦截代码来对震网进行拦截。

1376

01:11:39,429 --&gt; 01:11:40,995

these operators

1377

01:11:40,997 --&gt; 01:11:43,131

over and over again

1378

01:11:43,133 --&gt; 01:11:44,299

and nothing would happen.

这些操作一遍又一遍的执行着，但什么改变都不会发生。

1379

01:11:45,601 --&gt; 01:11:49,170

Yadlin: If your cyber weapon is good enough,

Yadlin: 如果你的网络武器足够好，

1380

01:11:49,172 --&gt; 01:11:51,906

if your enemy is not aware of it,

1381

01:11:52,174 --> 01:11:55,810

it is an ideal weapon, because the enemy

1382

01:11:55,812 --> 01:11:57,879

even don't understand what is happening to it.

因为敌人甚至不了解正在发生的事情，如果你的敌人没有意识到它，那么它将是一种理想的武器。

1383

01:11:58,447 --> 01:12:00,415

Gibney: Maybe even better if the enemy begins to doubt

1384

01:12:00,417 --> 01:12:02,717

- their own capability.

- Absolutely.

吉布尼:如果敌人开始怀疑自己的能力，也许更好。

——当然了。

1385

01:12:03,419 --> 01:12:06,287

Certainly one must conclude

1386

01:12:06,289 --> 01:12:09,090

that what happened at natanz

1387

01:12:09,092 --> 01:12:11,492

must have driven the engineers crazy,

1388

01:12:11,494 --> 01:12:13,961

because the worst thing that can happen

1389

01:12:13,963 --> 01:12:17,865

to a maintenance engineer is not being able to figure out

1390

---

01:12:17,867 --> 01:12:20,668

what the cause of specific trouble is.

当然必须得出结论在纳坦兹发生了什么，这将使推动进程的工程师们变得疯狂，因为最糟糕的事情可能就发生了，即一个维修工程师无法找出具体问题的原因是什么。

1391

01:12:20,670 --> 01:12:24,038

So they must have been analyzing themselves to death.

所以他们的分析一定是它自己阵亡的。

1392

01:12:26,775 --> 01:12:29,577

Heinonen: You know, you see centrifuges blowing up.

海诺宁: 你知道, 你看离心机正在自我毁灭。

1393

01:12:29,945 --> 01:12:33,748

You look the computer screens, they go with the proper speed.

你看电脑屏幕, 他们正以适当的速度消失。

1394

01:12:34,116 --> 01:12:37,785

There's a proper gas pressure. Everything looks beautiful.

有一个适当的气体压力。一切都看起来很好。

1395

01:12:40,389 --> 01:12:43,524

Sanger: Through 2009 it was going pretty smoothly.

桑格: 过去的 2009 年, 一切都进行的非常顺利。

1396

01:12:43,526 --> 01:12:45,360

Centrifuges were blowing up.

离心机正被炸毁。

1397

01:12:45,362 --> 01:12:48,029

The international atomic energy agency inspectors

1398

01:12:48,031 --> 01:12:50,531

would go in to natanz and they would see that

1399

---

01:12:50,533 --> 01:12:53,434

whole sections of the centrifuges had been removed.

国际原子能机构代理核查人员将会进入纳坦兹，他们会看到整个离心机已经被移除。

1400

01:12:54,670 --> 01:12:57,739

The United States knew from its intelligence channels

1401

01:12:57,741 --> 01:13:01,242

that some iranian scientists and engineers

1402

01:13:01,244 --> 01:13:05,012

were being fired because the centrifuges were blowing up

美国从其情报渠道了解到一些伊朗科学家和工程师们因为离心机正在自我毁灭而被解雇。

1403

01:13:05,014 --> 01:13:08,149

and the iranians had assumed that this was because

1404

01:13:08,151 --> 01:13:11,652

they had been making errors or manufacturing mistakes.

伊朗人知道这是因为他们一直在犯错误或正在制造错误。

1405

01:13:11,654 --> 01:13:13,287

Clearly this was somebody's fault.

显然这又是谁的错。

1406

01:13:14,390 --> 01:13:16,424

So the program was doing

1407

01:13:16,426 --> 01:13:18,259

exactly what it was supposed to be doing,

所以程序在做的正是它应该要做的事情，

1408

01:13:18,560 --> 01:13:21,329

which was it was blowing up centrifuges

---

1409

01:13:21,563 --> 01:13:23,398

and it was leaving no trace

1410

01:13:24,066 --> 01:13:26,167

and leaving the iranians to wonder

1411

01:13:26,602 --> 01:13:27,969

what they got hit by.

即离心机被炸毁，不留痕迹，要让伊朗人知道他们遭受了什么。

1412

01:13:28,437 --> 01:13:31,072

This was the brilliance of olympic games.

这是“奥运会”的辉煌。

1413

01:13:31,373 --> 01:13:33,074

You know, as a former director of a couple of big

1414

01:13:33,076 --> 01:13:34,342

3-letter agencies,

1415

01:13:34,710 --> 01:13:37,145

slowing down 1,000 centrifuges

in natanz...

你知道，作为一名拥有 3 个大写字母机构的前任主管在纳坦兹放缓 1000 台离心机，其心情是如何的.....

1416

01:13:38,013 --> 01:13:39,347

Abnormally good.

异常的好。

1417

01:13:39,349 --> 01:13:41,949

There was a need for... for...

For buying time.

有必要.....为放缓离心机的而花费的时间支付金钱。

1418

01:13:41,951 --> 01:13:44,585

There was a need for slowing them down.

需要将它们放缓。

1419

01:13:44,587 --> 01:13:46,521

There was the need to try to push them

1420

01:13:46,523 --> 01:13:47,889

to the negotiating table.

有必要在谈判桌上努力推动他们。

1421

01:13:47,891 --> 01:13:50,191

I mean, there are a lot of variables at play here.

我的意思是,有很多变量在起作用。

1422

01:13:54,530 --> 01:13:58,166

Sanger:President Obama would go down into the situation room,

1423

01:13:58,600 --> 01:14:01,869

and he would have laid out in front of him

1424

01:14:01,871 --> 01:14:03,538

what they called the horse blanket,

1425

01:14:03,540 --> 01:14:05,740

which was a giant schematic

1426

01:14:05,742 --> 01:14:09,210

of the natanz nuclear enrichment plan.

桑格:奥巴马总统会进到战情分析室,他称之为“马毯”,即一个巨大的纳坦兹核浓缩计划的示意图。

1427

01:14:09,778 --> 01:14:12,880

---

And the designers of olympic games

1428

01:14:12,882 --> 01:14:16,050

would describe to him what kind of progress they made

1429

01:14:16,052 --> 01:14:18,319

and look for him for the authorization

1430

01:14:18,321 --> 01:14:20,555

to move on ahead to the next attack.

这场竞技赛的胜利者将向他描述他们取得了什么样的进展并寻求他的授权从而继续执行下一个攻击。

1431

01:14:22,391 --> 01:14:24,425

And at one point during those discussions

1432

01:14:24,427 --> 01:14:26,160

he said to a number of his aides,

在讨论过程中，他对他众多助手指出一点，

1433

01:14:26,162 --> 01:14:27,762

"you know,I have some concerns

1434

01:14:27,764 --> 01:14:30,231

because once word of this gets out,"

1435

01:14:30,233 --> 01:14:31,899

and eventually he knew it would get out,

1436

01:14:31,901 --> 01:14:33,901

"the Chinese may use it as an excuse

1437

01:14:33,903 --> 01:14:37,238

for their attacks on us.The Russians might or others."

---

“你知道，我有一些担忧，因为这一旦泄露出去，”他知道形势最终将会失控，“中国人可能会使用它作为攻击我们的借口。也可能是俄国人或其他人。”

1438

01:14:37,773 --> 01:14:40,808

So he clearly had some misgivings,

1439

01:14:41,443 --> 01:14:43,244

but they weren't big enough to stop him

1440

01:14:43,246 --> 01:14:44,645

from going ahead with

the program.

所以他显然还有一些疑虑，但这些并不足以阻止他推进计划。

1441

01:14:45,848 --> 01:14:49,016

And then in 2010,

1442

01:14:49,351 --> 01:14:52,587

a decision was made to change the code.

然后到了 2010 年，他们决定修改代码。

1443

01:14:58,427 --> 01:14:59,861

Our human assets

1444

01:15:00,496 --> 01:15:03,965

weren't always able to get code updates into natanz

1445

01:15:03,967 --> 01:15:06,100

and we weren't told exactly why,

1446

01:15:06,668 --> 01:15:10,705

but we were told we had to have a cyber solution

1447

---

01:15:10,707 --> 01:15:12,206

for delivering the code.

我们人力资源并非总是能够将代码更新到纳坦兹，没有人没告诉我们为什么，但是我们被告知我们必须提出一个网络解决方案用来输送代码。

1448

01:15:12,641 --> 01:15:15,209

But the delivery systems were tricky.

但是输送系统是棘手的。

1449

01:15:15,511 --> 01:15:18,179

If they weren't aggressive enough, they wouldn't get in.

如果它们不够积极,那它们就不会进入系统。

1450

01:15:18,480 --> 01:15:20,848

If they were too aggressive, they could spread

1451

01:15:21,283 --> 01:15:22,517

and be discovered.

如果它们过于激进,它们就可以传播和被发现。

1452

01:15:24,520 --> 01:15:26,287

Chien:When we got the first sample,

1453

01:15:26,289 --> 01:15:28,623

there was some configuration information inside of it

1454

01:15:28,625 --> 01:15:31,859

And one of the pieces in there was a version number, 1.1

1455

01:15:32,861 --> 01:15:34,161

and that made us realize,

1456

01:15:34,163 --> 01:15:36,397

well, look, this likely isn't

the only copy.

---

简:当我们得到了第一个样本,它里面有一些配置信息,其中一条代码具有一个版本号,1.1。这使我们意识到,好吧,看,这可能不是唯一的副本。

1457

01:15:36,399 --> 01:15:38,633

We went back through our databases looking for

1458

01:15:38,635 --> 01:15:41,102

anything that looks similar to stuxnet.

我们回到我们的数据库去寻找任何看起来与震网病毒类似的病毒。

1459

01:15:42,838 --> 01:15:44,539

Chien:As we began to collect more samples,

1460

01:15:44,541 --> 01:15:46,440

we found a few earlier versions of stuxnet.

简:随着我们开始收集的样本越来越多,我们发现了震网早期的一些版本。

1461

01:15:47,509 --> 01:15:49,210

O'murchu:And when we analyzed that code,

1462

01:15:49,212 --> 01:15:51,879

we saw that versions previous to 1.1

1463

01:15:51,881 --> 01:15:53,548

were a lot less aggressive.

O 'murchu:当我们分析这段代码时,我们发现 1.1 之前样本少了很多攻击性。

1464

01:15:54,016 --> 01:15:55,850

The earlier version of stuxnet,

1465

01:15:55,852 --> 01:15:58,019

it basically required humans to do a little bit

1466

01:15:58,021 --> 01:16:00,354

---

of double clicking in order for it to spread

1467

01:16:00,356 --> 01:16:01,889

from one computer to another.

震网的早期版本，它基本上要求人们做一点双击行为才能从一台计算机传播到另一台。

1468

01:16:01,891 --> 01:16:04,158

And, so, what we believe after looking at that code

1469

01:16:04,160 --> 01:16:05,293

is two things,

所以，当看到那段代码之后，我们相信了两件事。

1470

01:16:05,694 --> 01:16:07,995

one, either they didn't get in to natanz

1471

01:16:07,997 --> 01:16:09,230

with that earlier version,

1472

01:16:09,232 --> 01:16:10,831

because it simply wasn't aggressive enough,

1473

01:16:10,833 --> 01:16:12,567

wasn't able to jump over that air gap,

一是，早期病毒版本没有进入纳坦兹，因为它的侵略性不够，无法跳过空气间隙，

1474

01:16:13,535 --> 01:16:16,370

and/or two,that payload as well

1475

01:16:16,372 --> 01:16:19,674

didn't work properly, didn't

work to their satisfaction,

1476

01:16:19,942 --> 01:16:21,776

---

maybe was not explosive enough.

二是,有效载荷也没有正常工作,因为没有让他们满意,这也许是爆发力不够。

1477

01:16:22,344 --> 01:16:24,579

There were slightly different versions

1478

01:16:24,581 --> 01:16:26,914

which were aimed at different parts

1479

01:16:26,916 --> 01:16:28,549

of the centrifuge cascade.

这有一些稍微不同的版本是针对离心机级联的不同部分。

1480

01:16:28,551 --> 01:16:31,552

Gibney:But the guys at symantec figured you changed the code

1481

01:16:31,554 --> 01:16:33,354

because the first variations couldn't get in

1482

01:16:33,356 --> 01:16:34,522

and didn't work right.

吉布尼:但是赛门铁克的员工发现你改变了代码,因为第一次改变无法进入并且无法正常工作。

1483

01:16:34,790 --> 01:16:34,789

Bullshit.

废话!

1484

01:16:36,592 --> 01:16:38,859

We always found a way to get across the air gap.

我们总是需要找到一种方法来穿过气隙。

1485

01:16:38,861 --> 01:16:41,128

At tao, we laughed when people thought they were

1486

01:16:41,130 --&gt; 01:16:42,797

protected by an air gap.

在 tao，当人们认为他们受到一个气隙的保护时，我们笑了。

1487

01:16:43,465 --&gt; 01:16:46,500

And for og, the early versions of the payload did work.

对于 OG 组织来说，有效载荷的早期版本确是有效。

1488

01:16:46,969 --&gt; 01:16:48,769

But what NSA did...

1489

01:16:50,372 --&gt; 01:16:53,174

Was always low-key and subtle.

但国家安全局做了什么.....总是很低调和很微妙。

1490

01:16:54,276 --&gt; 01:16:57,545

The problem was that unit 8200, the Israelis,

1491

01:16:57,547 --&gt; 01:16:59,680

kept pushing us to be more aggressive.

问题是以色列的 8200 装置不断地促使我们要具备侵略性。

1492

01:17:01,316 --&gt; 01:17:03,951

Chien: The later version of stuxnet 1.1,

1493

01:17:03,953 --&gt; 01:17:06,087

that version had multiple ways of spreading.

简：震网 1.1 最新的版本具有多种传播方式。

1494

01:17:06,089 --&gt; 01:17:08,289

Had the four zero days inside of it, for example,

里面有四个零日漏洞，例如：

1495

01:17:08,291 --&gt; 01:17:10,091

that allowed it to spread all by itself

1496

01:17:10,093 --> 01:17:11,225

without you doing anything.

允许它自身传播，无需你做任何事情。

1497

01:17:11,227 --> 01:17:12,827

It could spread via network shares.

它可以通过网络共享传播。

1498

01:17:12,829 --> 01:17:14,729

It could spread via USB keys.

它可以通过 USB 密钥传播。

1499

01:17:14,731 --> 01:17:17,131

It was able to spread via network exploits.

它能够通过网络漏洞进行传播。

1500

01:17:17,133 --> 01:17:18,666

That's the sample that

introduced us

1501

01:17:18,668 --> 01:17:20,668

to stolen digital certificates.

这就是向我们介绍了被盗的数字证书的样本。

1502

01:17:20,670 --> 01:17:23,104

That is the sample that,

all of a sudden,

1503

01:17:23,106 --> 01:17:25,272

became so noisy

---

1504

01:17:25,274 --&gt; 01:17:28,376

and caught the attention  
of the antivirus guys.

这就是突然间变得很喧嚣并引起反病毒家伙关注的样本。

1505

01:17:29,277 --&gt; 01:17:31,912

In the first sample  
we don't find that.

在第一个样本中，我们并没有发现这一点。

1506

01:17:33,248 --&gt; 01:17:39,320

And this is very strange,  
because it tells us that

1507

01:17:39,322 --&gt; 01:17:41,589

in the process  
of this development

1508

01:17:42,124 --&gt; 01:17:44,692

the attackers  
were less concerned

1509

01:17:44,694 --&gt; 01:17:46,527

with operational security.

这是很奇怪的，因为它告诉我们，在病毒的发展的过程中，攻击者不太关心操作的安全性。

1510

01:17:52,000 --&gt; 01:17:54,568

Chien:<i> Stuxnet actually kept</i>  
<i> a log inside of itself</i>

1511

01:17:55,270 --> 01:17:57,705

---

<i> of all the machines that</i>  
<i> it infected along the way</i>

1512

01:17:57,707 --> 01:17:59,774  
<i> as it jumped from one machine</i>  
<i> to another</i>

1513

01:17:59,776 --> 01:18:00,941  
<i> to another to another.</i>

1514

01:18:01,376 --> 01:18:03,344  
<i> And we were able to gather up</i>

1515

01:18:03,346 --> 01:18:05,379  
<i> all the samples</i>  
<i> that we could acquire,</i>

1516

01:18:05,547 --> 01:18:08,816  
<i> tens of thousands of samples.</i>  
<i> We extracted all of those logs.</i>

简：当震网在各计算机间不断跳跃的时候，它实际上保存了它沿途感染的所有计算机内部本身的日志，我们能够收集我们获取到的所有的数以万计的样本，能够提取出了所有的日志。

1517

01:18:08,818 --> 01:18:11,519  
O'murchu:<i> We could see the</i>  
<i> exact path that stuxnet took.</i>  
O'murchu: 我们可以看到，震网蠕虫的准确路径。

1518

01:18:13,655 --> 01:18:15,690  
Chien:<i> Eventually, we were able</i>  
<i> to trace back</i>

---

1519

01:18:15,692 --> 01:18:17,858

<i> this version of stuxnet</i>

<i> to ground zero,</i>

1520

01:18:18,160 --> 01:18:20,695

to the first five infections

in the world.

Chien: 最终,我们能够追溯这个版本的震网的爆发地, 在世界上排名前五名的感染区。

1521

01:18:21,530 --> 01:18:24,365

<i> The first five infections</i>

<i>are all outside a natanz plant,</i>

1522

01:18:24,533 --> 01:18:27,368

<i> all inside of organizations</i>

<i> inside of Iran,</i>

1523

01:18:28,136 --> 01:18:30,404

<i> all organizations</i>

<i> that are involved in</i>

1524

01:18:30,406 --> 01:18:32,840

<i> industrial control systems</i>

<i> and construction</i>

1525

01:18:32,842 --> 01:18:34,475

<i> of industrial control</i>

<i> facilities,</i>

1526

01:18:34,743 --> 01:18:38,312

<i> clearly contractors who were</i>

---

<i>working on the natanz facility.</i>

位于前五名的感染区都在纳坦兹工厂外，处于伊朗境内所有内部组织，涉及到了工业控制系统和工业控制设备及纳坦兹设施建造的明确承包商。

1527

01:18:38,314 --> 01:18:40,047

<i> And the attackers knew that.</i>

而攻击者知道这一点。

1528

01:18:40,649 --> 01:18:43,384

They were electrical companies.

They were piping companies.

1529

01:18:43,386 --> 01:18:44,985

They were, you know,

these sorts of companies.

他们是电气公司、管道公司。你知道的，它们是这类公司。

1530

01:18:45,187 --> 01:18:46,821

And they knew...

They knew the technicians

1531

01:18:46,823 --> 01:18:48,556

from those companies

would visit natanz.

他们知道，技术人员可以通过这些公司访问纳坦兹。

1532

01:18:48,558 --> 01:18:50,124

So they would infect

these companies

1533

01:18:50,325 --> 01:18:53,360

and then technicians

---

would take their computer

1534

01:18:53,362 --> 01:18:54,662

or their laptop or their USB...

所以他们会感染这些公司，从而让技术人员操控它们的电脑、笔记本或 USB 等等。

1535

01:18:54,664 --> 01:18:56,430

That operator then goes down

to natanz

1536

01:18:56,432 --> 01:18:58,599

and he plugs in his USB key,

which has some code

1537

01:18:58,601 --> 01:19:00,501

<i> that he needs to update</i>

<i> into natanz,</i>

1538

01:19:00,503 --> 01:19:02,069

<i> into the natanz network,</i>

1539

01:19:02,071 --> 01:19:03,738

<i> and now stuxnet</i>

<i> is able to get inside natanz</i>

1540

01:19:03,740 --> 01:19:05,106

<i> and conduct its attack.</i>

操作者则进入纳坦兹，并插入他的 USB，其中有他需要更新到纳坦兹的代码，从而进入到纳坦兹的网络，那么此时震网就能够进入纳坦兹并开展攻击。

1541

01:19:06,341 --> 01:19:08,709

---

These five companies  
were specifically targeted

1542

01:19:08,711 --> 01:19:10,578  
to spread stuxnet into natanz

1543

01:19:10,779 --> 01:19:14,014  
and that it wasn't that... that  
stuxnet escaped out of natanz

1544

01:19:14,016 --> 01:19:15,516  
and then spread  
all over the world

1545

01:19:15,518 --> 01:19:17,952  
and it was this big mistake  
and "oh, it wasn't meant

1546

01:19:17,954 --> 01:19:19,687  
to spread that far but it really did."

这五家公司被定向为震网病毒扩散至纳坦兹的攻击目标，然而震网病毒从纳坦兹逃脱失控以致扩散到世界各地，这是个大的失误。“噢，没料想过它会扩散得这么远，但它真的做到了”。

1547

01:19:19,689 --> 01:19:21,422  
No, that's not the way  
we see it.

1548

01:19:21,424 --> 01:19:24,358  
The way we see it is that they  
wanted it to spread far

1549

---

01:19:24,360 --> 01:19:26,026

so that they could get it  
into natanz.

不，那不是我们所看到的方式。我们看到它的方式是他们希望它越传越远，使他们能利用它扩散到纳坦兹。

1550

01:19:26,228 --> 01:19:30,131

Someone decided that we're  
gonna create something new,

1551

01:19:30,365 --> 01:19:31,432

something evolved,

1552

01:19:32,067 --> 01:19:34,201

that's gonna be  
far, far, far more aggressive.

有些人认为我们是要创造新的东西，事情逐渐演变，这样会更具侵略性。

1553

01:19:34,870 --> 01:19:38,305

And we're okay, frankly,

1554

01:19:38,307 --> 01:19:41,008

with it spreading all over  
the world to innocent machines

1555

01:19:41,243 --> 01:19:42,810

in order to go after  
our target.

坦率地说，我们没事，随着它扩散至世界各地感染无辜的机器，也便于达成我们的目标。

1556

01:19:48,551 --> 01:19:53,721

The Mossad had the role,

---

had the... the assignment

1557

01:19:54,422 --> 01:20:00,327

to deliver the virus

to make sure that stuxnet

1558

01:20:00,329 --> 01:20:05,199

<i>would be put in place in natanz</i>

<i> to affect the centrifuges.</i>

摩萨德的作用是安排病毒的投放，从而确保震网被投放在纳坦兹来影响离心机。

1559

01:20:07,068 --> 01:20:09,270

<i> Meir dagan,</i>

<i> the head of Mossad,</i>

1560

01:20:09,272 --> 01:20:12,573

<i> was under growing pressure</i>

<i> from the prime minister.</i>

1561

01:20:12,575 --> 01:20:15,442

<i> Benjamin netanyahu,</i>

<i> to produce results.</i>

梅尔 达甘,摩萨德的负责人面临着来自于内塔尼亚胡总理越来越大的压力，最终产生了效果。

1562

01:20:17,346 --> 01:20:18,512

<i> Inside the roc,</i>

1563

01:20:18,514 --> 01:20:20,581

<i> we were furious.</i>

身处“巨鸟”,我们感到愤怒。

1564

---

01:20:22,317 --> 01:20:25,152

<i> The Israelis took our code for</i>

<i> the delivery system</i>

1565

01:20:25,754 --> 01:20:27,054

<i> and changed it.</i>

为了输送系统，以色列人使用我们的代码并改变它。

1566

01:20:28,456 --> 01:20:30,958

<i> Then, on their own,</i>

<i> without our agreement,</i>

1567

01:20:30,960 --> 01:20:32,760

<i> they just fucking launched it.</i>

然后，他们自己并没有经过我们的同意，就自行启动了它。

1568

01:20:33,428 --> 01:20:35,329

<i> 2010 around the same time</i>

1569

01:20:35,331 --> 01:20:37,131

<i> they started killing</i>

<i> iranian scientists...</i>

大约在 2010 年的同一时间，他们开始杀害伊朗科学家...

1570

01:20:37,133 --> 01:20:38,866

<i> And they fucked up</i>

<i> the code!</i>

他们搞砸了代码！

1571

01:20:39,301 --> 01:20:40,835

<i> Instead of hiding,</i>

---

1572

01:20:40,837 --> 01:20:43,304

<i> the code started shutting down</i>

<i> computers,</i>

1573

01:20:43,306 --> 01:20:45,072

<i> so naturally, people noticed.</i>

自然而然，人们注意到了震网不再隐藏，代码开始关闭电脑。

1574

01:20:47,008 --> 01:20:50,010

<i> Because they were in a hurry,</i>

因为他们是在赶时间，他们打开了潘多拉的盒子。

1575

01:20:51,046 --> 01:20:52,146

<i> They let it out</i>

1576

01:20:52,148 --> 01:20:55,449

<i> and it spread</i>

<i> all over the world.</i>

他们将它放了出来，使其扩散到了世界各地。

1577

01:21:00,622 --> 01:21:02,423

Gibney:

<i> The worm spread quickly</i>

1578

01:21:02,691 --> 01:21:04,525

<i> but somehow</i>

<i> it remained unseen</i>

1579

01:21:04,527 --> 01:21:06,560

<i> until it was identified</i>

<i> in Belarus.</i>

---

吉布尼: 该蠕虫病毒迅速传播,但不知何故,它依然无法被看见,直到它在白俄罗斯被认定。

1580

01:21:07,562 --> 01:21:10,130

<i> Soon after,</i>

<i> Israeli intelligence confirmed</i>

1581

01:21:10,132 --> 01:21:12,132

<i> that it had made its way into</i>

<i> the hands</i>

1582

01:21:12,134 --> 01:21:14,134

<i> of the Russian</i>

<i> federal security service,</i>

1583

01:21:14,136 --> 01:21:16,103

<i> a successor to the kgb.</i>

不久之后,以色列情报部门证实,它进入了俄罗斯联邦安全局一个克格勃的继任者的手中。

1584

01:21:17,672 --> 01:21:21,075

<i>So it happened that the formula</i>

<i> for a secret cyber weapon</i>

1585

01:21:21,077 --> 01:21:22,743

<i> designed by</i>

<i> the U.S. and Israel</i>

1586

01:21:22,745 --> 01:21:24,278

<i> fell into the hands</i>

<i> of Russia</i>

1587

01:21:24,813 --> 01:21:26,814

---

<i> and the very country</i>

<i> it was meant to attack.</i>

恰巧一个由美国和以色列设计的秘密网络武器的公式落入了俄罗斯之手，这是一个它原本要攻击的国家。

1588

01:21:49,372 --> 01:21:50,905

Kiyaei:<i> In international law,</i>

1589

01:21:50,907 --> 01:21:54,441

<i> when some country</i>

<i> or a coalition of countries</i>

1590

01:21:54,676 --> 01:21:59,146

targets a nuclear facility,

it's a act of war.

Kiyaei: 在国际法中，当一些国家或国家联盟针对核设施进行攻击，这就是战争行为。

1591

01:22:00,048 --> 01:22:02,950

Please, let's be frank here.

1592

01:22:03,618 --> 01:22:06,320

If it wasn't Iran,

1593

01:22:06,955 --> 01:22:09,657

let's say a nuclear facility

in United States...

1594

01:22:10,926 --> 01:22:12,660

Was targeted in the same way...

1595

01:22:14,863 --> 01:22:16,497

---

The American government

1596

01:22:16,898 --> 01:22:19,633

would not

sit by and let this go.

坦白的讲，如果不是在伊朗，比方说在美国，一个核设施以同样的方式被攻击，美国政府对这种行为不会坐视不管的。

1597

01:22:20,468 --> 01:22:23,037

Gibney: Stuxnet is an attack

in peacetime

1598

01:22:23,039 --> 01:22:24,104

on critical infrastructures.

1599

01:22:24,306 --> 01:22:27,408

Yes, it is. I'm...

Look, when I read about it,

1600

01:22:27,410 --> 01:22:30,110

I read it, I go,

"whoa, this is a big deal."

1601

01:22:30,112 --> 01:22:31,845

Yeah.

吉布尼：震网病毒平时就是针对于关键基础设施的一种攻击。没错，我...看看，当我读到它，我读了它，“哇，这真的是一个大问题”。

1602

01:22:33,548 --> 01:22:36,083

Sanger:<i> The people who were</i>

<i> running this program,</i>

---

1603

01:22:36,085 --> 01:22:37,551

<i> including Leon panetta,</i>

1604

01:22:37,553 --> 01:22:39,553

<i> the director of the CIA</i>

<i> at the time,</i>

1605

01:22:40,155 --> 01:22:42,790

<i> had to go down</i>

<i> into the situation room</i>

1606

01:22:42,792 --> 01:22:44,992

<i> and face president Obama,</i>

1607

01:22:44,994 --> 01:22:48,529

<i> vice president biden</i>

<i> and explain that this program</i>

1608

01:22:48,797 --> 01:22:51,365

<i> was suddenly on the loose.</i>

当时，负责这个项目的人，包括美国中央情报局的主任帕内塔，也不得不去战况室，向奥巴马总统、拜登副总统解释这个项目的突然失控。

1609

01:22:52,667 --> 01:22:54,168

Vice president biden,

1610

01:22:54,170 --> 01:22:56,737

at one point

during this discussion,

1611

---

01:22:57,572 --> 01:23:00,274

sort of exploded

in biden-esque fashion

1612

01:23:00,276 --> 01:23:01,842

<i> and blamed the Israelis.</i>

副总统拜登在这次讨论中提到的一点是拜登式时尚爆炸，并谴责了以色列。

1613

01:23:01,844 --> 01:23:04,244

<i> He said, "it must have been</i>

<i> the Israelis</i>

1614

01:23:04,246 --> 01:23:06,313

<i> who made a change</i>

<i> in the code</i>

1615

01:23:06,315 --> 01:23:08,415

<i> that enabled it to get out."</i>

他说：那一定是以色列人在代码中做了手脚，使它能够被泄露。

1616

01:23:10,285 --> 01:23:12,486

Richard Clarke:<i> President Obama</i>

<i> said to the senior leadership,</i>

1617

01:23:12,488 --> 01:23:15,522

<i> "you told me it wouldn't</i>

<i>get out of the network. It did.</i>

1618

01:23:15,524 --> 01:23:17,691

You told me the iranians would

never figure out

---

1619

01:23:17,693 --&gt; 01:23:19,660

it was the United States.

They did.

1620

01:23:19,961 --&gt; 01:23:21,662

You told me it would have

a huge affect

1621

01:23:21,664 --&gt; 01:23:25,332

on their nuclear program,

and it didn't."

理查德.克拉克:奥巴马总统对高层领导说:“你们告诉我,它不会从网络中泄露出去,现在它却泄露了。你们告诉我,伊朗人不会发现是美国做的,他们发现了。你们告诉我,这会对他们的核计划造成巨大的影响,然而却没有。”

1622

01:23:27,035 --&gt; 01:23:30,537

Sanger:&lt;i&gt; The natanz plant is&lt;/i&gt;

&lt;i&gt;inspected every couple of weeks&lt;/i&gt;

1623

01:23:30,839 --&gt; 01:23:34,041

&lt;i&gt; by the international atomic&lt;/i&gt;

&lt;i&gt; energy agency inspectors.&lt;/i&gt;

1624

01:23:34,476 --&gt; 01:23:37,177

&lt;i&gt; And if you line up what&lt;/i&gt;

&lt;i&gt; you know about the attacks&lt;/i&gt;

1625

01:23:37,445 --&gt; 01:23:40,347

&lt;i&gt; with the inspection reports,&lt;/i&gt;

&lt;i&gt; you can see the effects.&lt;/i&gt;

Sanger: 纳坦兹工厂每几周就会有国际原子能机构的核查人员对其进行检查。如果你能将检验报告的攻击情况进行排列分析,你就能看到效果了。

1626

01:23:41,683 --> 01:23:43,884

Heinonen:<i> If you go to</i>  
<i> the iaea reports,</i>

1627

01:23:43,886 --> 01:23:46,153

<i> they really show that all</i>  
<i> of those centrifuges</i>

1628

01:23:46,155 --> 01:23:49,056

<i> were switched off</i>  
<i> and they were removed.</i>

1629

01:23:49,657 --> 01:23:53,027

<i> As much as almost couple</i>  
<i> of thousand got compromised.</i>

海诺宁: 如果你去看国际原子能机构报告, 他们确实表明, 所有这些离心机被关闭, 并且被清除了。数量高达近千台的离心机已被损害。

1630

01:23:54,195 --> 01:23:55,662

When you put this  
altogether,

1631

01:23:55,664 --> 01:23:58,465

I wouldn't be surprised  
if their program got delayed

1632

01:23:58,467 --> 01:23:59,633

by the one year.

当你把这些全部放到一起, 就算他们的项目推迟一年, 我也不会感到惊讶了。

1633-1634

---

1633

01:24:00,001 --&gt; 01:24:03,804

*<i> But go then to year 2012-13</i>*

1634

01:24:03,806 --&gt; 01:24:07,107

*<i>and looking how the centrifuges</i>**<i> started to come up again.</i>*

但是等到 2012、2013 年，就看离心机怎样又重新开始工作。

1635

01:24:07,375 --&gt; 01:24:08,976

Kiyaei:

*<i> Iran's number of centrifuges</i>*

1636

01:24:08,978 --&gt; 01:24:10,844

*<i> went up exponentially,</i>*

1637

01:24:10,846 --&gt; 01:24:14,915

to 20,000, with a stockpile  
of low enriched uranium.

1638

01:24:14,917 --&gt; 01:24:17,217

This isn't...

These are high numbers.

Kiyaei: 由于低浓缩铀的存储，伊朗的离心机数量成倍上升，多大上 20000。这些是高的数量。

1639

01:24:18,086 --&gt; 01:24:20,554

*<i> Iran's nuclear facilities</i>**<i> expanded</i>*

1640

01:24:20,556 --&gt; 01:24:23,157

*<i> with the construction</i>**<i> of Fordow</i>*

1641

01:24:23,159 --&gt; 01:24:25,759

*<i> and other highly protected</i>**<i> facilities.</i>*

伊朗的核设施与福尔道和其他高度保护设施的建设都在扩大。

1642

01:24:27,829 --&gt; 01:24:30,597

So ironically, cyber warfare...

1643

01:24:31,399 --&gt; 01:24:34,001

Assassination of

its nuclear scientists,

1644

01:24:34,436 --&gt; 01:24:37,704

economic sanctions,

political isolation...

1645

01:24:39,575 --&gt; 01:24:42,076

*<i> Iran has gone through</i>**<i> "a" to "x"</i>*

1646

01:24:42,078 --&gt; 01:24:46,680

*<i> of every chorus of policy</i>**<i> that the U.S., Israel,</i>*

1647

01:24:46,682 --&gt; 01:24:50,818

*<i> and those who ally with them</i>**<i> have placed on Iran,</i>*

1648

01:24:51,352 --&gt; 01:24:54,288

and they have actually made

Iran's nuclear program

1649

01:24:54,290 --> 01:24:57,024

more advanced today  
than it was ever before.

因此，具有讽刺意味的是，网络战争、核科学家遭遇暗杀、经济制裁、政治孤立……伊朗经历了美国、以色列及其盟友对伊朗处置的联合计策，从“a”走到了“X”；在这个过程中，它们也确实使得伊朗今天的核计划比它以往的任何时候都更为先进。

1650

01:25:01,197 --> 01:25:02,930

Mossad operative:

*This is a very*

1651

01:25:02,932 --> 01:25:06,066

*very dangerous*

*minefield that we are walking,*

1652

01:25:06,068 --> 01:25:08,969

and nations who decide

1653

01:25:08,971 --> 01:25:11,171

to take these covert actions

1654

01:25:12,307 --> 01:25:15,342

should be taking  
into consideration

1655

01:25:15,977 --> 01:25:20,781

all the effects,  
including the moral effects.

摩萨德特工：

我们行走在一个非常危险的雷区，决定采取这些秘密行动的国家应考虑到所有的影响，包括

道德方面的影响。

1656

01:25:21,416 --> 01:25:25,452

I would say  
that this is the price

1657

01:25:25,454 --> 01:25:29,790

that we have to pay in this...  
In this war,

1658

01:25:30,125 --> 01:25:32,659

and our blade  
of righteousness

1659

01:25:32,661 --> 01:25:34,061

shouldn't be so sharp.

我想说的是，这是我们在这场战争中应付出的代价，我们的公义之刃不应该如此锋利。

1660

01:25:39,901 --> 01:25:42,302

Gibney:<i> In Israel</i>  
<i> and in the United States,</i>

1661

01:25:42,304 --> 01:25:44,638

<i> the blade of righteousness</i>  
<i> cut both ways,</i>

1662

01:25:45,173 --> 01:25:47,708

<i> wounding the targets</i>  
<i> and the attackers.</i>

吉布尼:在以色列和美国，公义之刃使得攻击目标和攻击者两败俱伤。

1663-1668

---

1663

01:25:48,776 --&gt; 01:25:51,178

&lt;i&gt; When stuxnet infected&lt;/i&gt;

&lt;i&gt; American computers,&lt;/i&gt;

1664

01:25:51,180 --&gt; 01:25:53,247

&lt;i&gt; the department&lt;/i&gt;

&lt;i&gt; of homeland security,&lt;/i&gt;

1665

01:25:53,581 --&gt; 01:25:56,517

&lt;i&gt; unaware of the cyber weapons&lt;/i&gt;

&lt;i&gt; launch by the NSA,&lt;/i&gt;

1666

01:25:56,784 --&gt; 01:25:59,953

&lt;i&gt; devoted enormous resources&lt;/i&gt;

&lt;i&gt; trying to protect Americans&lt;/i&gt;

1667

01:25:59,955 --&gt; 01:26:01,255

&lt;i&gt; from their own government.&lt;/i&gt;

1668

01:26:01,756 --&gt; 01:26:04,191

&lt;i&gt; We had met the enemy&lt;/i&gt;

&lt;i&gt; and it was us.&lt;/i&gt;

当震网病毒感染了美国人的电脑时，国土安全部没有意识到这是国家安全局投放的网络武器，于是投入了大量的资源，试图保护美国人自己的政府。我们遇到的敌人其实是我们自己。

1669

01:26:09,964 --&gt; 01:26:11,632

Se 醬 Paul mcgurk:&lt;i&gt; The purpose of&lt;/i&gt;

&lt;i&gt; the watch stations that&lt;/i&gt;

1670

01:26:11,634 --&gt; 01:26:13,800

<i> you see in front of you</i>

<i> is to aggregate the data</i>

1671

01:26:13,802 --> 01:26:15,269

- <i> coming in from multiple feeds</i>

1672

01:26:15,271 --> 01:26:17,004

<i> of what the cyber threats</i>

<i> could be,</i>

1673

01:26:17,006 --> 01:26:18,438

so if we see threats

1674

01:26:18,440 --> 01:26:21,008

we can provide

real-time recommendations

1675

01:26:21,010 --> 01:26:24,244

<i> for both private companies,</i>

<i> as well as federal agencies.</i>

保罗·麦格克:观察站的目的在于你可以提前聚集多个网络威胁的来源数据,因此,如果我们发现了威胁,我们可以为私营公司,甚至联邦政府提供实时的建议。

1676

01:26:24,979 --> 01:26:28,448

Male journalist:

1677

01:26:28,850 --> 01:26:31,285

Yep, absolutely. We'd be

more than happy to discuss that.

1678

01:26:31,287 --> 01:26:32,352

---

Female journalist:

Se 醬, is it...

男记者:是的, 当然。我们会乐意讨论这个问题。女记者: 是的。

1679

01:26:32,354 --> 01:26:34,955

Mcgurk:<i> Early July of 2010</i>

<i> we received a call</i>

1680

01:26:34,957 --> 01:26:37,558

<i> that said that this piece</i>

<i> of malware was discovered</i>

1681

01:26:37,560 --> 01:26:38,959

<i>and could we take a look at it.</i>

Mcgurk: 2010年7月初我们接到一个电话,是说这个恶意软件被发现了,我们可以去看一下。

1682

01:26:40,563 --> 01:26:42,062

When we first started

the analysis,

1683

01:26:42,064 --> 01:26:44,398

there was that

"oh, crap" moment, you know,

1684

01:26:44,400 --> 01:26:46,233

where we sat there and said,

this is something

1685

01:26:46,235 --> 01:26:47,367

that's significant.

当我们刚开始分析,就是在“噢,废话”的时刻,你知道的,我们坐在那里说,这就是有了重大发现。

1686

01:26:47,369 --> 01:26:49,102

It's impacting  
industrial control.

1687

01:26:49,337 --> 01:26:51,805

It can disrupt it to the point  
where it could cause harm

1688

01:26:51,807 --> 01:26:53,874

and not only damage  
to the equipment,

1689

01:26:53,876 --> 01:26:55,943

but potentially harm  
or loss of life.

它会影响工业控制系统。它的破坏点在于它引起的伤害不仅会破坏设备，其潜在的伤害还会造成生命损失。

1690

01:26:56,711 --> 01:26:58,912

*We were very concerned*  
*because stuxnet*

1691

01:26:58,914 --> 01:27:00,681

*was something that*  
*we had not seen before.*

我们非常关注，因为震网是我们之前从未见过的东西。

1692

01:27:00,683 --> 01:27:02,816

*So there wasn't a lot of sleep*  
*that night.*

所以，那晚，我们都失眠了。

---

1693

01:27:02,818 --> 01:27:05,719

<i>Basically, light up the phones,</i>

<i> call everybody we know,</i>

1694

01:27:05,721 --> 01:27:08,956

<i> inform the secretary,</i>

<i> inform the white house,</i>

1695

01:27:09,157 --> 01:27:11,225

<i> inform the other departments</i>

<i> and agencies,</i>

1696

01:27:11,392 --> 01:27:14,094

<i> wake up the world,</i>

<i> and figure out what's going on</i>

1697

01:27:14,096 --> 01:27:16,296

<i> with this particular malware.</i>

基本上，我们用手机通知了每一个人，告知联合会秘书长，告知白宫，告知其他部门和机构，唤醒了世界，弄清楚这个恶意软件是怎么回事。

1698

01:27:18,099 --> 01:27:19,366

Good morning,

chairman lieberman,

1699

01:27:19,368 --> 01:27:20,634

ranking member Collins.

1700

01:27:21,202 --> 01:27:23,003

Something as simple

---

and innocuous as this

1701

01:27:23,005 --> 01:27:25,172

becomes a challenge  
for all of us to maintain

1702

01:27:25,174 --> 01:27:28,141

accountability control of our  
critical infrastructure systems.

早上好,柯林斯利伯曼主席,资深成员。这样一个简单无害的事情:保持并控制我们的关键基础设施系统,对我们所有人来说,这会成为一个难题。

1703

01:27:28,610 --> 01:27:30,744

This actually contains  
the stuxnet virus.

1704

01:27:30,945 --> 01:27:32,412

I've been asked on  
a number of occasions,

1705

01:27:32,414 --> 01:27:34,248

"did you ever think  
this was us?"

1706

01:27:34,250 --> 01:27:37,951

And at... at no point did that  
ever really cross our mind,

1707

01:27:37,953 --> 01:27:40,754

because we were looking at it  
from the standpoint of,

---

1708

01:27:41,089 --&gt; 01:27:43,056

is this something that's coming  
after the homeland?

这实际上包含震网病毒。我在许多场合上曾问过，“你有没有想过这是我们？”而在……在任  
何时候，那些曾在我们脑海中的想法，会因为我们的看从它的观点，在未来发生吗？

1709

01:27:43,058 --&gt; 01:27:45,626

You know, what... what's going  
to potentially impact,

1710

01:27:45,628 --&gt; 01:27:48,428

you know, our industrial control  
based here in the United States?

1711

01:27:48,863 --&gt; 01:27:51,798

You know, I liken it to,  
you know, field of battle.

你知道，潜在的影响是什么，你知道，我们的工业控制总部设在美国么？你知道，我把它比  
作——战场。

1712

01:27:51,966 --&gt; 01:27:53,934

You don't think the sniper  
that's behind you

1713

01:27:53,936 --&gt; 01:27:55,435

is gonna be shooting at you,

1714

01:27:55,603 --&gt; 01:27:57,204

'cause you expect him to be  
on your side.

你不觉得站在你身后的狙击手之所以会瞄准你，是因为你希望他站在你这边。

---

1715

01:27:57,739 --> 01:28:01,441

We really don't know  
who the attacker was

1716

01:28:01,443 --> 01:28:02,843

in the stuxnet case.

1717

01:28:03,044 --> 01:28:05,279

So help us understand  
a little more

1718

01:28:05,546 --> 01:28:07,714

what this thing is

1719

01:28:08,416 --> 01:28:13,820

whose origin and destination  
we don't understand.

在震网事件中，我们真的不知道攻击者是谁。所以帮助我们多一点了解这是什么，它的起源和目的地我们也不了解。

1720

01:28:15,056 --> 01:28:17,157

Gibney: Did anybody  
ever give you any indication

1721

01:28:17,159 --> 01:28:19,326

that it was something  
that they already knew about?

吉布尼:有人给你任何迹象表明他们已经知道了这件事么?

1722

01:28:19,328 --> 01:28:22,062

No, at no time did I get

---

the impression from someone

1723

01:28:22,064 --> 01:28:24,931

that that's okay, you know,  
get the little pat on the head,

1724

01:28:24,933 --> 01:28:26,400

and... and scooted  
out the door.

不，我从未得到任何迹象，你知道的，都是轻拍下脑门，然后匆忙离开。

1725

01:28:26,402 --> 01:28:28,268

I never received  
a stand-down order.

1726

01:28:28,270 --> 01:28:31,905

I never... no one ever asked,  
"stop looking at this."

我从未收到过停工的指令。从来没有人提出：停止寻找。

1727

01:28:32,507 --> 01:28:36,310

Do we think that this  
was a nation-state actor

1728

01:28:36,312 --> 01:28:38,745

and that there are a limited  
number of nation-states

1729

01:28:38,747 --> 01:28:42,149

that have such  
advanced capacity?

难道我们认为这是一个民族国家的行动者，拥有先进能力的并且人口数量有限的民族国家？

1730

01:28:43,985 --> 01:28:46,253

Gibney: Se 醬 mcgurk,  
the director of cyber

1731

01:28:46,255 --> 01:28:47,988

for the department  
of homeland security,

1732

01:28:47,990 --> 01:28:50,824

testified before the senate  
about how he thought

1733

01:28:50,826 --> 01:28:53,927

stuxnet was a terrifying threat  
to the United States.

1734

01:28:54,195 --> 01:28:55,462

Is that not a problem?

吉布尼:国土安全部网络主管部门在参议院上证实,震网对于美国来讲,是一个可怕的威胁。  
这不是一个问题吗?

1735

01:28:55,464 --> 01:28:57,364

I don't... and... and how...  
How do you mean?

1736

01:28:57,632 --> 01:29:00,033

That stuxnet was a bad idea?

我不太明白您的意思?震网是一个坏主意么?

1737

01:29:00,435 --> 01:29:03,103

---

Gibney: No, no, no, just that  
before he knew what it was

1738

01:29:03,105 --> 01:29:04,938

- and what it attacks...

- Oh, I... I get it.

1739

01:29:04,940 --> 01:29:06,340

- Gibney: Yeah...

- Yeah,

1740

01:29:06,342 --> 01:29:07,941

he was responding

to something that we...

吉布尼:不不不, 只是之前, 他就知道那是什么, 它攻击什么...

-噢 我懂了

吉布尼:是的

-他是在回应我们, 那...

1741

01:29:07,943 --> 01:29:07,941

Gibney:

He thought it was a threat

1742

01:29:09,277 --> 01:29:11,144

to critical infrastructure

in the United States.

吉布尼:他认为这对于美国的关键基础设施是一个威胁。

1743

01:29:11,146 --> 01:29:12,846

Yeah.

The worm is loose!

是的, 蠕虫已经失控了!

1744

01:29:12,848 --> 01:29:14,715

Gibney: The worm is loose.

I understand.

1745

01:29:14,717 --> 01:29:17,718

But there's...

There's a further theory

1746

01:29:17,720 --> 01:29:19,319

having to do with

whether or not,

1747

01:29:19,321 --> 01:29:21,555

following upon David sanger...

Gibney: 蠕虫已经失控了。我明白。但是是否还要跟随大卫 桑格做进一步的理论研究...

1748

01:29:21,557 --> 01:29:23,457

I got the subplot,

and who did that?

1749

01:29:23,459 --> 01:29:25,359

Was it the Israelis?

And, yeah, I...

我得到了次要情报，是谁做的呢？是以色列人吗？

1750

01:29:25,960 --> 01:29:28,862

I truly don't know,

and even though I don't know,

1751

01:29:28,864 --> 01:29:30,564

I still can't talk about it,

all right?

1752

01:29:30,865 --> 01:29:34,401

Stuxnet was somebody's  
covert action, all right?

我真的不知道，即使我不知道，但我现在仍然不能谈论它，好吗？震网是某人的秘密行动，好吗？

1753

01:29:34,635 --> 01:29:36,303

And the definition  
of covert action

1754

01:29:36,305 --> 01:29:39,206

is an activity in which you want  
to have the hand

1755

01:29:39,208 --> 01:29:41,208

of the actor forever hidden.

秘密行动的定义就是在活动中，你想要得到的永远隐藏在行动者的手中。

1756

01:29:41,576 --> 01:29:44,745

So by definition,  
it's gonna end up in this

1757

01:29:44,747 --> 01:29:46,646

"we don't talk about  
these things" box.

根据定义,最终结果就是“我们不谈论这些事情”。

1758

01:29:52,320 --> 01:29:55,188

Sanger:<i> To this day,</i>  
<i> the United States government</i>

1759

01:29:55,190 --> 01:29:57,324

<i> has never acknowledged</i>

1760

01:29:57,326 --> 01:30:01,795

<i> conducting any offensive cyber</i>

<i> attack anywhere in the world.</i>

桑格:直到今天, 美国政府从未承认在世界的任一地方进行过任何网络攻击。

1761

01:30:03,831 --> 01:30:08,735

<i> But thanks to Mr. snowden,</i>

<i> we know that in 2012</i>

1762

01:30:08,737 --> 01:30:11,138

<i> president Obama issued</i>

<i> an executive order</i>

1763

01:30:11,339 --> 01:30:14,074

<i> that laid out</i>

<i> some of the conditions</i>

1764

01:30:14,076 --> 01:30:16,543

<i> under which cyber weapons</i>

<i> can be used.</i>

但是由于斯诺登事件的爆料, 我们知道了奥巴马总统在 2012 年发布了这样的行政命令: 在一些情况下是可以使用网络武器的。

1765

01:30:16,545 --> 01:30:20,113

<i> And interestingly,</i>

<i> every use of a cyber weapon</i>

1766

---

01:30:20,115 --> 01:30:23,150

<i> requires presidential</i>

<i> sign-off.</i>

有趣的是，每一次使用网络武器需要总统签字同意。

1767

01:30:24,385 --> 01:30:28,221

That is only true

in the physical world

1768

01:30:28,223 --> 01:30:30,090

for nuclear weapons.

在核武器的物理世界里这是唯一的真实。

1769

01:30:41,402 --> 01:30:43,703

Clarke:<i> Nuclear war and nuclear</i>

<i> weapons are vastly different</i>

1770

01:30:43,705 --> 01:30:45,572

<i> from cyber war</i>

<i> and cyber weapons.</i>

1771

01:30:45,574 --> 01:30:48,542

<i> Having said that,</i>

<i> there are some similarities.</i>

Clarke: 核战争和核武器与网络战争和网络武器是有很大的区别。尽管如此，也有一些相似之处。

1772

01:30:48,544 --> 01:30:50,944

<i> And in the early 1960s,</i>

1773

01:30:51,379 --> 01:30:53,280

<i> the United States government</i>

---

<i> suddenly realized</i>

1774

01:30:53,282 --> 01:30:55,348

<i> it had thousands</i>

<i> of nuclear weapons,</i>

1775

01:30:55,550 --> 01:30:57,217

<i> big ones and little ones,</i>

1776

01:30:57,219 --> 01:30:59,553

<i> weapons on jeeps,</i>

<i> weapons on submarines,</i>

1777

01:31:00,421 --> 01:31:02,556

and it really didn't have  
a doctrine.

1778

01:31:02,558 --> 01:31:04,391

It really didn't have  
a strategy.

而在 20 世纪 60 年代初，美国政府突然意识到它有成千上万的核武器,大的和小的,吉普车的武器、潜艇的武器。这真的没有规律可循。

1779

01:31:04,393 --> 01:31:06,159

It really didn't have  
an understanding

1780

01:31:06,427 --> 01:31:08,562

at the policy level about  
how he was going to use

1781

---

01:31:08,564 --> 01:31:09,729

all of these things..

在政策层面上，关于他如何使用这些武器真的没有的一个清晰的认知。

1782

01:31:10,298 --> 01:31:12,299

And so academics

1783

01:31:12,301 --> 01:31:15,135

started publishing

unclassified documents

1784

01:31:15,137 --> 01:31:19,005

about nuclear war

and nuclear weapons.

所以学者开始发公布关于核战争和核武器的非机密文档。

1785

01:31:21,477 --> 01:31:22,742

Sanger:<i> And the result was</i>

1786

01:31:23,110 --> 01:31:25,445

<i> more than 20 years,</i>

<i> in the United States,</i>

1787

01:31:25,447 --> 01:31:28,148

of very vigorous

national debates

1788

01:31:28,683 --> 01:31:32,219

<i> about how we want to go use</i>

<i> nuclear weapons.</i>

桑格:结果超过 20 年了,像美国这样非常积极的国家仍在讨论我们如何使用核武器。

---

1789

01:31:35,591 --> 01:31:37,858

And not only did that cause  
the congress

1790

01:31:37,860 --> 01:31:40,260

and people in the executive  
branch in Washington

1791

01:31:40,262 --> 01:31:41,995

to think about these things,

1792

01:31:41,997 --> 01:31:45,265

it caused the Russians  
to think about these things.

这不仅引起了国会和华盛顿行政分支的人去思考这些事情，也引起了俄罗斯人的思考。

1793

01:31:46,200 --> 01:31:49,436

<i> And out of that</i>

<i> grew nuclear doctrine,</i>

1794

01:31:49,438 --> 01:31:51,104

<i> mutual assured destruction,</i>

1795

01:31:51,106 --> 01:31:56,243

<i> all of that complicated set</i>

<i> of nuclear dynamics.</i>

跳出发展核学说，同归毁灭论等所有这些复杂的核动力学理论。

1796

01:31:56,844 --> 01:31:59,813

Today, on this vital issue  
at least,

---

1797

01:31:59,815 --> 01:32:01,882

we have seen what can be  
accomplished

1798

01:32:01,884 --> 01:32:03,550

when we pull together.

今天,至少在这个至关重要的问题上,我们能看到当我们齐心协力的时候,我们能完成什么。

1799

01:32:03,552 --> 01:32:07,721

We can't have that discussion  
in a sensible way right now

1800

01:32:07,989 --> 01:32:10,056

about cyber war  
and cyber weapons

1801

01:32:10,058 --> 01:32:11,424

because everything is secret.

对于网络战争和网络武器而言,每件事都是机密的。

1800

01:32:07,989 --> 01:32:10,056

about cyber war  
and cyber weapons

1801

01:32:10,058 --> 01:32:11,424

because everything is secret.

1802

01:32:12,360 --> 01:32:15,562

And when you get  
into a discussion

1803

---

01:32:15,564 --> 01:32:18,665

with people in the government,  
people still in the government,

1804

01:32:18,667 --> 01:32:20,200

people who have  
security clearances,

1805

01:32:20,468 --> 01:32:21,701

you run into a brick wall.

当你与那些拥有安全许可的政府中人进入讨论，那些人仍然在政府，你将会无路可走。

1806

01:32:21,969 --> 01:32:23,303

Trying to stop Iran

1807

01:32:23,305 --> 01:32:26,640

is really the... my number  
one job, and I think...

试着去阻止伊朗真的是...我的头等工作，我想...

1808

01:32:26,642 --> 01:32:28,041

Host: And let me ask you,  
in that context,

1809

01:32:28,043 --> 01:32:30,076

about the stuxnet  
computer virus potentially...

主持人：我问你，在这种情况下，关于震网计算机病毒可能...

1810

01:32:30,078 --> 01:32:31,645

You can ask,  
but I won't comment.  
你可以问，但是我不会发表评论

1811

01:32:32,714 --> 01:32:33,813

Host: Can you tell us anything?

---

主持人：你能告诉我们什么吗？

1812

01:32:33,815 --> 01:32:34,981

No.

不能

1813

01:32:34,983 --> 01:32:37,417

What do you think

has had the most impact

1814

01:32:37,419 --> 01:32:39,553

on their nuclear

decision-making,

你认为什么对他们的核决策能产生最大的影响，

1815

01:32:39,555 --> 01:32:41,254

the stuxnet virus?

是震网病毒吗？

1816

01:32:41,256 --> 01:32:43,523

I can't talk about stuxnet.

我不能谈论震网蠕虫病毒。

1817

01:32:43,525 --> 01:32:47,928

I can't even talk about the

operation of Iran centrifuges.

我甚至都不能谈论伊朗离心机的操作。

1818

01:32:48,095 --> 01:32:50,330

Was the U.S. involved

in any way

1819

01:32:50,332 --> 01:32:51,932

in the development

of stuxnet?

---

美国是在通过任何可能的方式来开发震网病毒吗？

1820

01:32:52,400 --> 01:32:55,101

It's hard to get into any kind  
of comment on that

1821

01:32:55,103 --> 01:32:57,237

till we've finished any...

Our examination.

我们很难进行任何评论，直到我们已经完成我们的测试。

1822

01:32:58,072 --> 01:32:59,406

But, sir,

I'm not asking you

1823

01:32:59,408 --> 01:33:01,374

if you think another  
country was involved.

但是，先生，我不在问你是否认为涉及到其他国家。

1824

01:33:01,376 --> 01:33:03,376

I'm asking you if

the U.S. was involved.

我想问是否涉及到美国。

1825

01:33:03,378 --> 01:33:05,745

And we're...

This is not something

我们...

1826

01:33:05,747 --> 01:33:07,647

that we're gonna be able  
to answer at this point.

这不是我们此刻能够回答的。

1827

01:33:08,049 --> 01:33:10,383

---

Look, for the longest time,  
i was in fear that  
你看，我已经在恐惧中度过了很长一段时间

1828  
01:33:10,385 --> 01:33:11,885  
I couldn't actually say  
the phrase

1829  
01:33:11,887 --> 01:33:13,553  
"computer network attack."  
实际上，我不能够说这句话“电脑网络攻击”。

1830  
01:33:13,555 --> 01:33:16,423  
This stuff is hideously  
overclassified,

1831  
01:33:16,425 --> 01:33:18,558  
and it gets into the way  
of a...  
这个材料是高度机密，它进入的方式...

01:33:18,560 --> 01:33:21,361  
Of a mature  
public discussion

1833  
01:33:21,363 --> 01:33:23,897  
as to what it is  
we as a democracy

1834  
01:33:23,899 --> 01:33:28,068  
want our nation to be doing  
up here in the cyber domain.  
作为一个民主国家，就成熟的公开讨论而言，我们希望我们的国家做网络领域。

1835  
01:33:28,070 --> 01:33:30,904  
Now, this is a former director  
of NSA and CIA

---

1836

01:33:30,906 --> 01:33:32,872

saying this stuff is  
overclassified.

现在,说这个材料是高度机密的是前国安局和中央情报局局长。

1837

01:33:33,107 --> 01:33:36,610

One of the reasons this  
is highly classified as it is

1838

01:33:36,612 --> 01:33:38,211

this is a peculiar  
weapons system.

高度机密的原因之一是,这是一个特殊的武器系统。

1839

01:33:38,213 --> 01:33:40,213

This is a weapons system  
that's come out of

1840

01:33:40,215 --> 01:33:41,548

the espionage community,

1841

01:33:41,550 --> 01:33:44,818

and... and so those people  
have a habit of secrecy.

这是个超越间谍范畴的武器系统,所以这些人具有保密的习惯。

1842

01:33:44,820 --> 01:33:47,120

Secrecy is still justifiable  
in certain cases

1843

01:33:47,122 --> 01:33:50,323

to protect sources or to protect  
national security

为了保护资源和保护国家安全,在某些情况下机密仍然是合理的,

1844

01:33:50,325 --> 01:33:53,493

---

but when we deal with secrecy,  
don't hide behind it

1845

01:33:53,495 --> 01:33:57,430

to use as an excuse to not  
disclose something properly

1846

01:33:57,432 --> 01:33:59,466

that you know should be

1847

01:33:59,468 --> 01:34:00,734

<i> or that the American people</i>

但当我们处理机密时，不要拿它作为借口，从而不揭露一些你应该知道的非常正确的事情，或者，美国人民最终需要看到的事情。

1848

01:34:00,736 --> 01:34:02,002

<i> need ultimately to see.</i>

1849

01:34:04,672 --> 01:34:06,740

Gibney:<i> While most government</i>

<i> officials refused</i>

1850

01:34:06,742 --> 01:34:08,208

<i> to acknowledge the operation,</i>

1851

01:34:08,809 --> 01:34:11,578

<i> at least one key insider did</i>

<i> leak parts of the story</i>

1852

01:34:11,580 --> 01:34:12,679

<i> to the press.</i>

虽然大多数专业官员拒绝承认相关信息，但至少有一个关键内幕故事泄漏给媒体。

1853

01:34:12,681 --> 01:34:16,583

---

<i> In 2012, David sanger wrote</i>  
<i> a detailed account</i>

1854

01:34:16,585 --> 01:34:19,919  
<i> of olympic games that unmasked</i>  
<i> the extensive joint operation</i>

1855

01:34:19,921 --> 01:34:21,855  
<i> between the U.S. and Israel</i>

1856

01:34:21,857 --> 01:34:24,090  
<i> to launch cyber attacks</i>  
<i> on natanz.</i>

2012年，大卫桑格写详细叙述了奥运会，“奥运会”，即“奥运会”揭露了美国和以色列在纳坦兹发动的网络攻击的联合行动。

1857

01:34:24,959 --> 01:34:26,826  
Sanger:  
<i> The publication of this story</i>

1858

01:34:26,828 --> 01:34:28,862  
coming at a time that turned out  
that there were

1859

01:34:28,864 --> 01:34:31,665  
a number of other unrelated  
national security stories

1860

01:34:31,667 --> 01:34:34,334  
being published,  
lead to the announcement

1861

01:34:34,336 --> 01:34:37,704  
of investigations  
by the Attorney General.

桑格：这个故事在一段时间内横空出世，同时有一些无关紧要的的国家安全事件正在被公开，这件事导致了调查通告被总检察长调查。

1862

01:34:38,172 --&gt; 01:34:40,473

Gibney: In... into the press  
and into the leaks?

吉布尼：在...在媒体上曝光？

1863

01:34:40,475 --&gt; 01:34:42,008

Into the press  
and into the leaks.

在媒体上曝光。

1864

01:34:44,478 --&gt; 01:34:45,645

Gibney:

<i> Soon after the article,</i>

1865

01:34:45,647 --&gt; 01:34:47,814

<i> the Obama administration</i>

<i> targeted</i>

1866

01:34:47,816 --&gt; 01:34:50,850

<i> general James Cartwright</i>

<i> in a criminal investigation</i>

1867

01:34:50,852 --&gt; 01:34:52,118

<i> for allegedly leaking</i>

1868

01:34:52,120 --&gt; 01:34:54,454

<i> classified details</i>

<i> about stuxnet.</i>

吉布尼：这篇文章发布后不久，因涉嫌泄露震网病毒的机密细节，奥巴马政府将刑事侦查部门的詹姆斯·卡特莱特作为了目标。

1869

01:34:55,823 --&gt; 01:34:57,323

Journalist: There are reports  
of cyber attacks

1870

01:34:57,325 --&gt; 01:35:00,126

on the iranian nuclear program  
that you ordered.

记者：有报道称你下令对伊朗的核设施实施了网络攻击。

。

1871

01:35:00,128 --&gt; 01:35:01,628

What's your reaction to this  
information getting out?

这个信息泄露，你的反应是什么？

1872

01:35:01,630 --&gt; 01:35:03,229

Well, first of all, I'm not  
gonna comment on the...

好吧，首先，我不会发表评论...

1873

01:35:03,231 --&gt; 01:35:06,599

The details of... what are...

详细情况...是...

1874

01:35:08,969 --&gt; 01:35:13,273

Supposed to be  
classified items.

应该是机密项目。

1875

01:35:14,075 --&gt; 01:35:16,443

<i> Since I've been in office,</i>

<i> my attitude has been</i>

1876

01:35:16,677 --&gt; 01:35:19,946

<i> zero tolerance for</i>

<i> these kinds of leaks.</i>

由于我一直在办公室里，我的态度就是绝对不能容忍信息的泄露。

1877

01:35:20,548 --&gt; 01:35:22,215

We have mechanisms

in place

1878

01:35:22,516 --> 01:35:26,052

where, if we can root out folks  
who have leaked,

1879

01:35:26,854 --> 01:35:28,288

they will suffer  
consequences.

我们具有适当的机制，如果我们能发现是谁泄露的信息，他们将承受相应的后果。

1880

01:35:28,656 --> 01:35:31,057

It became  
a significant issue

1881

01:35:31,059 --> 01:35:33,326

and a very wide-ranging  
investigation

1882

01:35:33,328 --> 01:35:35,762

in which I think most of  
the people who were cleared

1883

01:35:35,764 --> 01:35:37,330

for olympic games  
at some point

1884

01:35:37,332 --> 01:35:39,199

had been, you know, interviewed  
and so forth.

它演变成了非常严重的问题，同时出现了因某些原因而被“奥运会”清理的绝大多数人正在广泛的接受调查、询问的现象。

1885

01:35:39,201 --> 01:35:40,900

<i> When stuxnet hit the media,</i>

---

1886

01:35:40,902 --> 01:35:43,103

<i> they polygraphed everyone</i>

<i> in our office,</i>

1887

01:35:43,105 --> 01:35:44,704

<i> including people</i>

<i> who didn't know shit.</i>

当震网病毒攻击媒体时，在我们的工作场所，他们就会对包括那些连狗屎都不知道的每个人进行测谎。

1888

01:35:44,706 --> 01:35:46,840

<i> You know, they polyed</i>

<i> the interns, for god's sake.</i>

你知道，看在上帝的面上，他们聚集了实习生。

1889

01:35:47,374 --> 01:35:48,775

These are criminal acts

1890

01:35:48,777 --> 01:35:50,410

when they release

information like this,

当他们发布这样信息是犯罪的行为，

1891

01:35:50,945 --> 01:35:54,781

and we will conduct

thorough investigations

1892

01:35:55,382 --> 01:35:57,150

as we have in the past.

并且，我们将会深入调查，和我们过去一样。

1893

01:35:59,186 --> 01:36:01,421

Gibney:<i> The administration</i>

<i> never filed charges,</i>

---

1894

01:36:01,756 --> 01:36:03,556

<i> possibly afraid that</i>

<i> a prosecution</i>

1895

01:36:03,558 --> 01:36:06,426

<i> would reveal classified details</i>

<i> about stuxnet.</i>

吉布尼：从来没有提出指控的政府可能害怕起诉，这将会透露震网的涉密细节。

1896

01:36:07,361 --> 01:36:10,797

<i> To this day, no one in the U.S.</i>

<i> or Israeli governments</i>

1897

01:36:10,799 --> 01:36:12,866

<i> has officially acknowledged</i>

<i> the existence</i>

1898

01:36:12,868 --> 01:36:14,334

<i> of the joint operation.</i>

直到今天，美国和以色列政府也没有人公开承认联合行动的存在。

1899

01:36:16,303 --> 01:36:17,771

<i> I would never compromise</i>

1900

01:36:17,773 --> 01:36:19,539

<i> ongoing operations</i>

<i> in the field,</i>

1901

01:36:19,541 --> 01:36:23,610

<i> but we should be able to talk</i>

<i> about capability.</i>

我绝不会向不间断的操作妥协，但是我们应该能够谈论相关能力。

1902

01:36:24,979 --> 01:36:26,479

---

<i> We can talk about our...</i>

1903

01:36:27,615 --> 01:36:30,383

<i> Bunker busters,</i>

<i> why not our cyber weapons?</i>

我们能够谈论我们...地堡炸弹，为什么不是我们的网络武器？

1904

01:36:30,751 --> 01:36:31,818

<i> I mean, the secrecy</i>

1905

01:36:31,820 --> 01:36:33,520

<i> of the operation</i>

<i> has been blown.</i>

我的意思是，操作的机密性已经被切断。

1906

01:36:35,055 --> 01:36:37,090

<i> Our friends in Israel</i>

<i> took a weapon</i>

1907

01:36:37,092 --> 01:36:38,558

<i> that we jointly developed,</i>

1908

01:36:38,560 --> 01:36:40,693

<i> in part to keep Israel</i>

<i> from doing something crazy,</i>

我们在以色列的朋友携带我们联合开发的武器，部分原因是为了阻止以色列做出一些疯狂的事情，

1909

01:36:41,128 --> 01:36:42,929

<i> and then used it</i>

<i> on their own in a way</i>

1910

01:36:42,931 --> 01:36:44,297

<i> that blew the cover</i>

<i> of the operation</i>

1911

01:36:44,299 --&gt; 01:36:45,465

*<i> and could have led to war.</i>*

否则，他们可能会通过他们自己的方式来使用它，即引爆操作界面从而可能导致战争的爆发。

1912

01:36:45,467 --&gt; 01:36:46,900

*<i> And we can't talk about that?</i>*

不能和我们谈论吗？

1913

01:36:51,438 --&gt; 01:36:53,339

Mowatt-larssen: *<i> There's a way</i>**<i> to talk about stuxnet.</i>*

Mowatt-larssen: 有一种方式能够谈论震网。

1914

01:36:53,908 --&gt; 01:36:55,275

It happened.

它发生了。

1915

01:36:55,277 --&gt; 01:36:58,144

That... to deny that it happened

is... is foolish.

那...不能否认它的发生时...是愚蠢的。

1916

01:36:58,146 --&gt; 01:37:00,079

So the fact it happened

1917

01:37:00,081 --&gt; 01:37:01,581

is really what we're talking

about here.

所以，我们在这里讨论的是真是发生过的。

1918

01:37:01,583 --&gt; 01:37:03,416

What does...

What are the implications

这是什么...

1919

01:37:03,418 --> 01:37:06,252

of the fact that we now are in  
a post-stuxnet world?

我们现在正处在后震网时代这一事实的影响是什么？

1920

01:37:06,754 --> 01:37:09,189

What I said

to David sanger was,

1921

01:37:09,191 --> 01:37:11,891

"i understand the difference  
in destruction is dramatic,

1922

01:37:12,126 --> 01:37:14,594

but this has the whiff  
of August 1945."

我对大卫桑格说的是，“我明白毁灭的差异是明显的，但是这有 1945 年 8 月的味道。”

1923

01:37:15,429 --> 01:37:16,996

Somebody just used  
a new weapon,

1924

01:37:17,364 --> 01:37:20,099

and this weapon will not  
be put back into the box.

有人只是使用一个新的武器，这个武器不会被放回盒子中。

1925

01:37:20,534 --> 01:37:23,203

I... I know

no operational details

我...我不知道操作细节

1926

01:37:23,205 --> 01:37:26,139

and don't know what anyone did  
or didn't do

1927

01:37:26,141 --&gt; 01:37:28,775

before someone decided to use  
the weapon, all right.

我也不知道别人在决定使用武器时，做过什么，没做过什么，好吧。

1928

01:37:29,109 --&gt; 01:37:30,343

I do know this.

我只知道这点。

1929

01:37:30,345 --&gt; 01:37:32,245

If we go out and do something,

1930

01:37:33,013 --&gt; 01:37:35,114

most of the rest of the world  
now thinks

1931

01:37:35,316 --&gt; 01:37:35,315

that's the new standard

1932

01:37:36,884 --&gt; 01:37:39,752

and it's something that they now  
feel legitimated to do as well.

我只知道，如果我们走出去做一些能够让世界上大部分其他国家认为那是新的标准并且感到合法化的一些事情。

1933

01:37:41,155 --&gt; 01:37:42,622

<i> But the rules of engagement,</i>

1934

01:37:42,624 --&gt; 01:37:45,191

<i> international norms,</i>

<i> treaty standards,</i>

1935

01:37:45,193 --&gt; 01:37:47,026

<i> they don't exist right now.</i>

但是交战的规则，国际规范，跳跃标准，他们马上就不存在了。

---

1936

01:37:50,865 --> 01:37:54,033

Brown:<i> The law of war, because</i>  
<i>it began to develop so long ago</i>

1937

01:37:54,035 --> 01:37:57,604

<i>is really dependent on thinking</i>  
<i> of things kinetically</i>

布朗：战争的法律很久以前开始发展，它真正是依赖于事物的动力学思维和物理领域，

1938

01:37:57,972 --> 01:37:59,472

<i> and the physical realm.</i>

1939

01:37:59,740 --> 01:38:03,142

<i> So for example,</i>  
<i> we think in terms of attacks.</i>  
所以，举个例子，我们认为攻击方面。

1940

01:38:04,078 --> 01:38:06,312

You know an attack when it  
happens in the kinetic world.  
你知道攻击发生在动力学世界中。

1941

01:38:06,314 --> 01:38:08,047

<i> It's not really</i>  
<i> much of a mystery.</i>  
这不是太大的秘密。

1942

01:38:08,049 --> 01:38:10,984

But in cyberspace it is  
sort of confusing to think,

1943

01:38:11,552 --> 01:38:13,019

how far do we have to go

---

1944

01:38:13,021 --> 01:38:15,221

before something

is considered an attack?

但是在网络空间中，它是很难去思考的，在一些行为被认为是攻击之前我们不得不走多远？

1945

01:38:15,389 --> 01:38:19,158

So we have to take

all the vocabulary

1946

01:38:19,660 --> 01:38:22,495

and the terms that we use

in strategy

因此，我们必须采用所有词汇和我们在战略和军事操作中使用的术语，并且使他们适应于网络领域。

1947

01:38:22,497 --> 01:38:24,130

and military operations

1948

01:38:24,365 --> 01:38:27,433

and adapt them

into the cyber realm.

1949

01:38:28,769 --> 01:38:30,203

Sanger:

<i> For nuclear we have these</i>

1950

01:38:30,205 --> 01:38:32,138

<i> extensive inspection regimes.</i>

桑格：对于核问题，我们具有一些广泛的检查制度。

1951

01:38:32,439 --> 01:38:34,507

<i> The Russians come</i>

<i> and look at our silos.</i>

俄国人来到这里并看了我们的筒仓。

1952

---

01:38:34,842 --> 01:38:36,442

<i> We go and look at their silos.</i>  
我们也去他们那并看了他们的筒仓。

1953

01:38:36,911 --> 01:38:38,912

<i> Bad as things get between</i>  
<i> the two countries,</i>

1954

01:38:39,113 --> 01:38:41,014

those inspection regimes  
have held up.  
这些检查制度已经防止了两个国家之间的事情变得糟糕。

1955

01:38:41,016 --> 01:38:43,917

But working that our for...  
For cyber

1956

01:38:43,919 --> 01:38:45,485

would be virtually impossible.  
但是我们的网络的工作几乎是不可能。

1957

01:38:45,786 --> 01:38:47,153

Where do you  
send your inspector?  
你向哪里发送你的检查?

1958

01:38:47,521 --> 01:38:49,589

Inside the laptop of,  
you know...  
你知道，在笔记本电脑内部，

1959

01:38:49,924 --> 01:38:52,191

How many laptops are there  
in the United States and Russia?  
在美国和俄罗斯有多少台笔记本电脑?

1960

---

01:38:52,559 --> 01:38:54,761

It's much more difficult  
in the cyber area

1961

01:38:54,763 --> 01:38:57,096

to construct  
an international regime

1962

01:38:57,098 --> 01:39:00,133

<i> based on treaty commitments</i>  
<i> and rules of the road</i>

1963

01:39:00,135 --> 01:39:01,301

<i> and so forth.</i>

在网络区域，构建基于条约承诺和运输规则等等的国家制度更加困难。

1964

01:39:01,303 --> 01:39:04,604

<i> Although, we've tried to have</i>  
<i> discussions with the Chinese</i>

1965

01:39:04,606 --> 01:39:06,639

<i> and Russians</i>

<i> and so forth about that,</i>

1966

01:39:06,641 --> 01:39:08,007

<i> but it's very difficult.</i>

虽然，我们试图与中国和俄罗斯等国进行讨论网络制度，但是它还是非常困难的。

1967

01:39:09,109 --> 01:39:12,612

Brown:<i> Right now,</i>

<i> the norm in cyberspace is</i>

1968

01:39:12,614 --> 01:39:13,947

do whatever you can

get away with.

布朗：现在，网络空间的标准是无论你做什么你都能逃脱。

1969

01:39:14,949 --> 01:39:17,350

That's not a good norm,

but it's the norm that we have.

这不是好的标准，但这是我们拥有的标准。

1970

01:39:17,918 --> 01:39:19,986

<i> That's the norm</i>

<i>that's preferred by states</i>

1971

01:39:19,988 --> 01:39:22,622

<i> that are engaging in lots of</i>

<i> different kinds of activities</i>

这个标准是国家偏爱的，可以从事大量不同类型并且国家安全可以从中受益的活动，

1972

01:39:22,624 --> 01:39:24,691

<i> that they feel are benefitting</i>

<i> their national security.</i>

1973

01:39:25,893 --> 01:39:28,494

Yadlin:<i> Those who excel in cyber</i>

1974

01:39:28,496 --> 01:39:31,297

are trying to slow down

the process

1975

01:39:31,299 --> 01:39:32,966

of creating regulation.

耶德林：那些擅长网络的人试图放缓建立监管的过程。

1976

01:39:33,434 --> 01:39:37,270

Those who are victims

we like the regulation

1977

01:39:37,272 --> 01:39:41,007

---

to be in the open as...

As soon as possible.

对于那些受害者，我们希望监管尽可能快的开放。

1978

01:39:43,177 --> 01:39:46,012

Brown:<i> International law in this</i>

<i> area is written by custom,</i>

布朗：在这个区域的国际法律是根据风俗习惯进行编写，

1979

01:39:46,014 --> 01:39:49,115

<i> and customary law</i>

<i> requires a nation to say,</i>

1980

01:39:49,117 --> 01:39:50,883

<i> this is what we did</i>

<i> and this is why we did it.</i>

风俗习惯法需要一个国家说，这就是我们所做的，以及这就是我们为什么做的，

1981

01:39:51,652 --> 01:39:54,587

And the U.S. doesn't want to  
push the law in that direction

1982

01:39:54,589 --> 01:39:57,023

and so it chooses not  
to disclose its involvement.

美国不想在该方向推出法律，因此，它选择不披露它的参与，

1983

01:39:57,591 --> 01:39:59,792

And one of the reasons  
that I thought it was important

1984

01:39:59,794 --> 01:40:02,662

to tell the story  
of olympic games

1985

---

01:40:02,664 --> 01:40:05,465

was not simply because  
it's a cool spy story,

1986

01:40:05,467 --> 01:40:08,701

it is, but it's because  
as a nation...

我认为重要的原因之一是讲述奥运故事，不只是因为它是一个很酷的间谍故事，因为，它是作为一个国家...

1987

01:40:09,870 --> 01:40:13,439

We need to have a debate about  
how we want to use cyber weapons  
我们需要一个关于如何使用网络武器的辩论

1988

01:40:13,674 --> 01:40:17,176

because we are the most  
vulnerable nation on earth

1989

01:40:17,344 --> 01:40:19,178

to cyber-attack ourselves.  
因为我们是世界上最脆弱的使用网络攻击攻击我们自己的国家。

1990

01:40:23,150 --> 01:40:25,651

Mcgurk:<i> If you get up in the</i>  
<i>morning and turn off your alarm</i>

1991

01:40:25,653 --> 01:40:30,023

<i> and make coffee and pump gas</i>  
<i> and use the atm,</i>

1992

01:40:30,557 --> 01:40:32,358

<i> you've touched</i>  
<i> industrial control systems.</i>

Mcgurk:如果你早上起床，关闭闹钟、煮咖啡、加油、使用 ATM，你将会接触工业控制系统。

1993

---

01:40:32,360 --> 01:40:34,027

<i> It's what powers our lives.</i>

这是我们生活的能量。

1994

01:40:34,361 --> 01:40:36,996

And unfortunately,

these systems are connected

1995

01:40:36,998 --> 01:40:40,666

and interconnected in some ways

that make them vulnerable.

不幸的是，这些系统通过某种方式互相联结在一起了，从而使他们是脆弱的

1996

01:40:40,668 --> 01:40:43,403

Critical infrastructure

systems generally were built

多年以前，建立关键基础设施系统通常没有考虑到安全问题

1997

01:40:43,405 --> 01:40:46,039

years and years and years ago

without security in mind

1998

01:40:46,041 --> 01:40:48,141

and they didn't realize

how things were gonna change,

1999

01:40:48,143 --> 01:40:50,376

maybe they weren't even meant to

be connected to the Internet.

并且他们也没有意识到什么样的事情将会发生改变，也许他们甚至没有打算连接到互联网。

2001

01:40:53,481 --> 01:40:56,115

and through also,

unfortunately, a lot of attacks

2002

01:40:56,417 --> 01:40:58,751

that most of these systems  
are relatively easy

2003

01:40:58,753 --> 01:41:01,421

for a sophisticated hacker  
to get into.

不幸的是，我们通过大量的实验看到了很多攻击，这些攻击发生大多数在都比较容易让一个复杂的黑客进入这些系统。

2004

01:41:03,391 --> 01:41:05,191

<i> Let's say you took over</i>  
<i> the control system</i>

2005

01:41:05,193 --> 01:41:07,927

<i> of a railway.</i>  
<i> You could switch tracks.</i>

比方说，你接手铁路的控制系统，你可以切换轨迹。

2006

01:41:08,395 --> 01:41:10,696

<i> You could cause</i>  
<i> derailments of trains</i>

2007

01:41:10,698 --> 01:41:12,498

<i> carrying explosive materials.</i>  
你可能会导致携带易燃易爆物品列车出轨。

2008

01:41:13,700 --> 01:41:16,936

<i>What if you were in the control</i>  
<i> system of gas pipelines</i>

2009

01:41:17,271 --> 01:41:19,839

<i> and when a valve was</i>  
<i> supposed to be open,</i>

2010

01:41:19,841 --> 01:41:22,508

<i> it was closed</i>

---

<i> and the pressure built up</i>

2011

01:41:22,709 --> 01:41:24,243

<i> and the pipeline exploded?</i>

如果你是在控制天然气管道系统，当阀门应该是开放的时候，但它却被关闭了，压力增大最后管道爆炸？

2012

01:41:25,212 --> 01:41:29,148

There are companies that run  
electric power generation

2013

01:41:29,550 --> 01:41:31,451

or electric power distribution

2014

01:41:31,718 --> 01:41:33,753

<i> that we know have been hacked</i>

2015

01:41:34,121 --> 01:41:36,556

<i> by foreign entities</i>

<i> that have the ability</i>

2016

01:41:36,558 --> 01:41:38,191

<i> to shut down the power grid.</i>

有许多发电和配电的企业已被有能力外国实体黑客入侵从而关闭电网。

2017

01:41:38,759 --> 01:41:40,860

Sanger:<i> Imagine for a moment</i>

桑格：想象一下

2018

01:41:40,862 --> 01:41:43,629

<i> that not only all the power</i>

<i> went off on the east coast,</i>

2019

01:41:43,931 --> 01:41:45,965

<i> but the entire Internet</i>

---

<i> came down.</i>

不仅所有的能量去了东海岸，而且整个互联网也坍塌了，

2020

01:41:46,633 --> 01:41:49,168

Imagine what the economic  
impact of that is

2021

01:41:49,636 --> 01:41:51,771

even if it only lasted  
for 24 hours.

想象一下，即便只维持了 24 个小时，这对经济的影响是什么。

2022

01:41:54,141 --> 01:41:55,808

Newsreader:

<i> According to the officials,</i>

2023

01:41:55,810 --> 01:41:59,045

<i> Iran is the first country ever</i>  
<i> in the middle east</i>

2024

01:41:59,047 --> 01:42:01,547

<i> to actually be engaged</i>  
<i> in a cyber war</i>

2025

01:42:01,549 --> 01:42:03,749

<i> with the United States</i>  
<i> and Israel.</i>

新闻播报者：据官员了解，伊朗是有史以来第一个能够与美国和以色列实际从事网络战争的中东国家。

2026

01:42:03,751 --> 01:42:07,120

<i> If anything they said</i>  
<i> the recent cyber attacks</i>

2027

01:42:07,122 --> 01:42:09,288

<i> were what encouraged</i>

---

<i> them to plan to set up</i>

2028

01:42:09,290 --> 01:42:12,625

<i> the cyber army, which will</i>

<i> gather computer scientists,</i>

2029

01:42:12,627 --> 01:42:15,461

<i> programmers,</i>

<i> software engineers...</i>

他们说最新的网络攻击鼓励他们计划成立的网络军队，这里将聚集计算机科学家，程序员，  
的软件工程师...

2030

01:42:15,463 --> 01:42:18,397

Kiyaei:<i> If you are a youth</i>

<i> and you see assassination</i>

2031

01:42:18,399 --> 01:42:20,032

<i> of a nuclear scientist,</i>

2032

01:42:20,434 --> 01:42:22,902

your nuclear facilities

are getting attacked,

2033

01:42:23,604 --> 01:42:26,906

wouldn't you join

your national cyber army?

Kiyaei:如果你是一个青年，你看到核科学家的暗杀，你的核设施正在遭受越来越攻击，你会  
不会加入你的国家网络部队？

2034

01:42:27,608 --> 01:42:28,908

Well, many did.

好吧，许多人都会这么做。

2035

01:42:29,176 --> 01:42:32,345

And that's why today,

Iran has one of the largest...

2036

01:42:33,514 --> 01:42:35,915

Cyber armies in the world.

这就是为什么如今，伊朗拥有的世界上最大的网络军队之一..。

2037

01:42:36,416 --> 01:42:38,818

So whoever initiated this

2038

01:42:38,820 --> 01:42:41,320

and was very proud of themselves

to see that little dip

2039

01:42:41,822 --> 01:42:46,058

in Iran's centrifuge numbers,

should look back now

2040

01:42:46,527 --> 01:42:50,096

and acknowledge

that it was a major mistake.

所以无论谁发起这件事，并且很自豪看着伊朗离心机的数量不断的增加，并承认过去的行为是个重大失误。

2041

01:42:50,697 --> 01:42:53,933

Very quickly,

Iran sent a message

2042

01:42:53,935 --> 01:42:57,637

to the United States,

very sophisticated message,

2043

01:42:57,639 --> 01:43:00,439

and they did that

with two attacks.

很快，伊朗发送给美国非常复杂的消息，并且，他们执行了两个攻击。

2044

---

01:43:01,108 --> 01:43:03,910

<i> First, they attacked</i>

<i> Saudi aramco,</i>

2045

01:43:04,211 --> 01:43:06,179

<i> the biggest oil company</i>

<i> in the world,</i>

2046

01:43:06,513 --> 01:43:09,215

<i> and wiped out every piece</i>

<i> of software,</i>

2047

01:43:09,217 --> 01:43:13,619

<i> every line of code,</i>

<i> on 30,000 computer devices.</i>

首先，他们攻击沙特阿美，世界上最大的石油公司，并且清除 30,000 计算机设备中每一个的软件，每一行代码。

2048

01:43:14,988 --> 01:43:20,560

Then Iran did a surge attack

on the American banks.

接下来，伊朗对美国银行的攻击不断激增。

2049

01:43:20,562 --> 01:43:23,496

The most extensive attack on

American banks ever

2050

01:43:23,498 --> 01:43:26,332

launched from the middle east,

happening right now.

曾经来自于中东的对美国银行最广泛的攻击，现在马上就要发生了。

2051

01:43:26,334 --> 01:43:26,332

Newsreader:

<i> Millions of customers</i>

2052

---

01:43:27,868 --> 01:43:31,237

<i>trying to bank online this week</i>

<i> blocked, among the targets,</i>

2053

01:43:31,471 --> 01:43:34,307

<i> bank of America,</i>

<i> pnc, and Wells Fargo.</i>

记者：数以百万计的客户本周网上银行受阻，目标包括：美国银行，pnc,和富国银行。

2054

01:43:34,575 --> 01:43:37,977

<i> The U.S. suspects hackers</i>

<i> in Iran may be involved.</i>

美国怀疑伊朗黑客可能参与其中。

2055

01:43:39,880 --> 01:43:41,914

NSA source:

<i> When Iran hit our banks,</i>

2056

01:43:41,916 --> 01:43:44,317

<i> we could have shut down</i>

<i> their botnet,</i>

2057

01:43:44,319 --> 01:43:46,485

<i> but the state department</i>

<i> got nervous,</i>

2058

01:43:46,687 --> 01:43:49,388

<i> because the servers weren't</i>

<i> actually in Iran.</i>

NSA 来源：当伊朗袭击我们的银行，我们本可以关闭他们的僵尸网络，但国务院太紧张了，因为服务器实际上没在伊朗。

2059

01:43:50,057 --> 01:43:52,391

<i> So until there was</i>

<i> a diplomatic solution,</i>

2060

---

01:43:52,826 --> 01:43:55,461

<i> Obama let the private sector</i>

<i> deal with the problem.</i>

所以，直到有一个外交方案，奥巴马让私营部门处理这个问题。

2061

01:43:56,063 --> 01:43:58,998

I imagine that in

the white house situation room

2062

01:43:59,333 --> 01:44:01,400

people sat around and said...

我想，在白宫的战况室内一群人坐在一起说：“

2063

01:44:02,069 --> 01:44:05,104

Let me be clear,

i don't imagine, I know.

让我清醒点吧，我无法想象，我知道。

2064

01:44:05,439 --> 01:44:08,007

People sat around in

the white house situation room

2065

01:44:08,009 --> 01:44:11,043

and said, "the iranians have

sent us a message

2066

01:44:11,045 --> 01:44:15,281

which is essentially,

'stop attacking us in cyberspace

2067

01:44:15,283 --> 01:44:17,817

the way you did at natanz

with stuxnet.

人们在白宫战况室围坐，并说：“伊朗已经发送给我们消息，内容基本上是：停止使用在纳坦兹利用震网的攻击方式在网络空间攻击我们”。

2068

---

01:44:18,252 --> 01:44:19,619

We can do it, too."

我们可以做到这一点。”

2069

01:44:21,521 --> 01:44:24,090

Melman:<i> There are unintended</i>  
<i> consequences</i>

2070

01:44:24,092 --> 01:44:26,158

<i> of the stuxnet attack.</i>

梅尔曼：震网蠕虫攻击事件有很多意想不到的后果。

2071

01:44:26,593 --> 01:44:30,363

You wanted to cause confusion  
and damage to the other side,

2072

01:44:30,365 --> 01:44:33,132

but then the other side  
can do the same to you.

你想对对方造成混乱和损坏，但随后对方也可以对你做同样的事情。

2073

01:44:33,900 --> 01:44:36,802

<i> The monster turned against</i>  
<i> its creators,</i>

2074

01:44:36,804 --> 01:44:39,205

<i> and now everyone is</i>  
<i> in this game.</i>

怪物才会对抗它的创造者，现在大家都在这个游戏当中。

2075

01:44:40,107 --> 01:44:42,575

They did a good job  
in showing the world,

2076

01:44:42,577 --> 01:44:45,978

including the bad guys,

---

what you would need to do

2077

01:44:45,980 --> 01:44:48,114

in order to cause  
serious trouble

2078

01:44:48,382 --> 01:44:50,883

that could lead

to injuries and death.

他们向世界展示了他们做了一项优秀的工作，包括坏男孩，  
为了引起可能会导致受伤和死亡的严重麻烦，你需要做什么

2079

01:44:51,151 --> 01:44:53,953

It's inevitable that more  
countries will acquire

2080

01:44:53,955 --> 01:44:56,255

the capacity to use cyber,

2081

01:44:56,257 --> 01:44:59,725

*both for espionage*

*and for destructive activities.*

对于间谍活动和破坏性活动，越来越多的国家将获得使用网络的能力，这是不可避免的。

2082

01:45:00,494 --> 01:45:02,828

*And we've seen this in some of*

*the recent conflicts*

2083

01:45:02,830 --> 01:45:04,297

*that Russia's been involved in.*

并且我们已经在最近的一些俄罗斯的参与冲突看到了这点。

2084

01:45:04,498 --> 01:45:07,166

*If there's a war, then somebody*

*will try to knock out*

2085

01:45:07,168 --&gt; 01:45:09,568

&lt;i&gt; our communication system&lt;/i&gt;

&lt;i&gt; or the radar.&lt;/i&gt;

如果有战争，然后有人会尽量击倒我们的通信系统或雷达。

2086

01:45:09,570 --&gt; 01:45:12,138

Mcgurk:&lt;i&gt; State-sponsored&lt;/i&gt;

&lt;i&gt; cyber sleeper cells,&lt;/i&gt;

2087

01:45:12,572 --&gt; 01:45:14,407

&lt;i&gt; they're out there&lt;/i&gt;

&lt;i&gt; everywhere today.&lt;/i&gt;

Mcgurk: 如今我们随处可见国家资助的网络单元。

2088

01:45:14,641 --&gt; 01:45:16,976

&lt;i&gt; It could be for&lt;/i&gt;

&lt;i&gt; communications purposes.&lt;/i&gt;

这可能是以通信为目的。

2089

01:45:16,978 --&gt; 01:45:19,178

&lt;i&gt; It could be for&lt;/i&gt;

&lt;i&gt; data exfiltration.&lt;/i&gt;

这可能是数据泄露。

2090

01:45:19,446 --&gt; 01:45:23,049

It could be to, you know,

Shepherd in the next stuxnet.

这可能是，你知道，下一个震网的领导者。

2091

01:45:23,450 --&gt; 01:45:25,318

&lt;i&gt; I mean, you've been focusing&lt;/i&gt;

&lt;i&gt; on stuxnet,&lt;/i&gt;

2092

01:45:25,320 --&gt; 01:45:26,852

&lt;i&gt; but that was just a small part&lt;/i&gt;

2093

01:45:26,854 --&gt; 01:45:29,021

&lt;i&gt; of a much larger&lt;/i&gt;

&lt;i&gt; iranian mission.&lt;/i&gt;

我的意思是，你一直专注于震网，但这只是伊朗的大使命中的一小部分。

2094

01:45:29,756 --&gt; 01:45:31,390

Gibney:&lt;i&gt; There was a larger&lt;/i&gt;

&lt;i&gt; iranian mission?&lt;/i&gt;

吉布尼：还有一个更大的伊朗使命的？

2095

01:45:34,528 --&gt; 01:45:37,763

&lt;i&gt; Nitro Zeus. Nz.&lt;/i&gt;

硝基宙斯、新西兰。

2096

01:45:39,132 --&gt; 01:45:43,336

&lt;i&gt; We spent hundreds of millions,&lt;/i&gt;

&lt;i&gt; maybe billions on it.&lt;/i&gt;

我们花了几亿，也许几十亿。

2097

01:45:45,939 --&gt; 01:45:49,508

&lt;i&gt; In the event the Israelis&lt;/i&gt;

&lt;i&gt; did attack Iran,&lt;/i&gt;

2098

01:45:49,510 --&gt; 01:45:52,178

&lt;i&gt; we assumed we would be drawn&lt;/i&gt;

&lt;i&gt; into the conflict.&lt;/i&gt;

在以色列事件中攻击伊朗，我们花了几亿，也许几十亿，我们以为我们卷进冲突中了。

2099

01:45:53,547 --&gt; 01:45:57,016

&lt;i&gt; We built in attacks on Iran's&lt;/i&gt;

&lt;i&gt; command-and-control system&lt;/i&gt;

2100

01:45:57,018 --&gt; 01:45:59,385

&lt;i&gt; so the iranians couldn't&lt;/i&gt;

&lt;i&gt; talk to each other in a fight.&lt;/i&gt;

我们对伊朗的指挥和控制系统实施攻击以至于伊朗人不能够在战斗互相交谈。

2101

01:45:59,886 --> 01:46:03,422

<i> We infiltrated their iads,</i>

<i> military air defense systems,</i>

2102

01:46:03,724 --> 01:46:05,758

<i> so they couldn't shoot down</i>

<i> our planes if we flew over.</i>

我们渗透到他们的 IADS、军事防空系统，使他们在我们飞过去的情况下不能击落我们的飞机。

2103

01:46:06,526 --> 01:46:09,628

<i> We also went after</i>

<i>their civilian support systems,</i>

2104

01:46:09,630 --> 01:46:12,198

<i> power grids, transportation,</i>

2105

01:46:12,566 --> 01:46:15,368

<i> communications,</i>

<i> financial systems.</i>

我们也追求平民支持系统、电网、运输系统、通信系统、财政系统。

2106

01:46:15,969 --> 01:46:19,271

<i> We were inside waiting,</i>

<i> watching,</i>

2107

01:46:19,539 --> 01:46:22,541

<i> ready to disrupt, degrade,</i>

<i> and destroy those systems</i>

2108

01:46:22,543 --> 01:46:23,876

<i> with cyber-attacks.</i>

我们在里面等待、查看，利用网络攻击准备破坏，降解和销毁这些系统。

2109

---

01:46:27,514 --> 01:46:28,981

<i> And in comparison,</i>

2110

01:46:29,216 --> 01:46:31,450

<i> stuxnet was a back alley</i>

<i> operation.</i>

相比之下，震网是一个小道操作。

2111

01:46:32,586 --> 01:46:36,088

<i> Nz was the plan</i>

<i> for a full-scale cyber war</i>

2112

01:46:36,090 --> 01:46:37,957

<i> with no attribution.</i>

新西兰是一个没有归属的全面网络战争的计划。

2113

01:46:38,725 --> 01:46:40,226

The question is,

is that the kind of world

2114

01:46:40,228 --> 01:46:40,226

we want to live in?

问题是我们想生存在什么样的世界里？

2115

01:46:41,762 --> 01:46:45,531

And if we don't, as citizens,

how do we go about a process

2116

01:46:45,533 --> 01:46:47,533

where we have

a more sane discussion?

作为公民，如果我们不这样做，我们怎么开始一个更理智的讨论？

2117

01:46:47,535 --> 01:46:49,935

We need an entirely new way

of thinking about

---

2118

01:46:49,937 --> 01:46:51,504

how we're gonna solve  
this problem.

我们需要一种全新的方式来思考如何解决这个问题。

2119

01:46:52,439 --> 01:46:54,573

You're not going to get  
an entirely new way

2120

01:46:54,575 --> 01:46:55,975

of solving this problem

2121

01:46:56,276 --> 01:46:59,078

until you begin to have  
an open acknowledgement

即我们拥有网络武器，你不会得到一个全新的方式解决这个问题，直到你开始有一个开放的认知。

2122

01:46:59,579 --> 01:47:01,914

that we have cyber weapons  
as well,

2123

01:47:02,783 --> 01:47:05,818

and that we may have to agree  
to some limits on their use

2124

01:47:06,353 --> 01:47:08,687

if we're going to get other  
nations to limit their use.

同时，如果我们想要其他国家限制使用网络武器，我们也不得不同意其使用一些限制性的网络武器。。

2125

01:47:08,689 --> 01:47:10,256

It's not gonna be  
a one-way street.

---

它不会是一个单行道。

2126

01:47:10,457 --> 01:47:13,125

I'm old enough to have worked  
on nuclear arms control

2127

01:47:13,460 --> 01:47:15,961

and biological weapons  
arms control

2128

01:47:15,963 --> 01:47:18,130

and chemical weapons  
arms control.

我的年龄足够在核武器控制、生物武器军备控制和化学武器军备控制工作了。

2129

01:47:19,299 --> 01:47:23,769

And I was told in each of those  
types of arms control,

2130

01:47:23,771 --> 01:47:25,104

when we were beginning,  
并且当我们开始时，我被告知在每一种军备控制的类型，

2131

01:47:25,405 --> 01:47:28,374

"it's too hard.

There are all these problems.

“这太难了。这有这些问题。

2132

01:47:28,642 --> 01:47:30,743

It's technical.

There's engineering.

它是具有技术性的，是工程。

2133

01:47:30,745 --> 01:47:32,411

There's science involved.

这涉及到了科学。

---

2134

01:47:32,413 --> 01:47:34,747

There are real verification  
difficulties.

这确实存在一些困难。

2135

01:47:34,749 --> 01:47:36,282

You'll never get there."

你永远不会到达那里。”

2136

01:47:36,716 --> 01:47:39,118

Well, it took 20,

30 years in some cases,

2137

01:47:39,553 --> 01:47:41,320

but we have

a biological weapons treaty

2138

01:47:41,322 --> 01:47:42,721

that's pretty damn good.

好吧，有时候花了 20、30 年，但是我们有一个相当好的生物武器条约。

2139

01:47:42,723 --> 01:47:44,223

We have

a chemical weapons treaty

2140

01:47:44,225 --> 01:47:45,624

that's pretty damn good.

我们有一个相当好的化学武器条约。

2141

01:47:45,792 --> 01:47:48,127

We've got three or four

nuclear weapons treaties.

我们三个或四个核武器条约。

2142

---

01:47:48,428 --> 01:47:50,029

Yes, it may be hard,  
是的，它可能很难，

2143

01:47:50,297 --> 01:47:52,398

and it may take  
20 or 30 years,  
它可能需要 20 年或 30 年，

2144

01:47:52,799 --> 01:47:55,367

but it'll never happen  
unless you get serious about it

2145

01:47:55,836 --> 01:47:57,803

and it'll never happen  
unless you start it.  
除非你认真对待它并启动它，否则这永远不会发生。

2146

01:48:03,610 --> 01:48:06,579

Today, after two years  
of negotiations,

2147

01:48:07,013 --> 01:48:10,316

the United States, together with  
our international partners,

2148

01:48:10,784 --> 01:48:14,186

has achieved something that  
decades of animosity has not,

2149

01:48:14,821 --> 01:48:16,722

a comprehensive,  
long-term deal

2150

01:48:17,157 --> 01:48:20,826

with Iran that will prevent it

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from obtaining a nuclear weapon.

美国与国际合作伙伴一起，已经获得了与伊朗因几十年的仇恨而一直没有签订的全面的、长期协议，这将阻止它获得核武器。

2151

01:48:21,027 --> 01:48:23,496

It was reached in  
lausanne, Switzerland,

2152

01:48:23,498 --> 01:48:25,998

by Iran, the U.S.,  
britain, France,

2153

01:48:26,000 --> 01:48:27,933

Germany, Russia,  
and China.

而核武器将到达瑞士洛桑，伊朗，美国，英国，法国，德国，俄罗斯和中国。

2154

01:48:27,935 --> 01:48:31,036

It is a deal in which Iran  
will cut

2155

01:48:31,038 --> 01:48:35,241

its installed centrifuges  
by more than two thirds.

这是一个交易，伊朗将切断三分之二以上其安装离心机。

2156

01:48:35,442 --> 01:48:38,677

Iran will not enrich uranium  
with its advanced centrifuges

2157

01:48:38,679 --> 01:48:40,679

for at least  
the next ten years.

至少在未来十年，伊朗不会凭借其先进的离心机进行铀浓缩。

2158

01:48:40,681 --> 01:48:43,315

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It will make our country,  
our allies,

2159

01:48:43,317 --> 01:48:44,950

and our world safer.

它将使我们的国家，我们的盟友，和我们的世界变得更加安全。

2160

01:48:45,852 --> 01:48:49,855

Netanyahu: Seventy years after  
the murder of 6 million Jews

2161

01:48:49,857 --> 01:48:54,927

Iran's rulers promised  
to destroy my country,

内塔尼亚胡：70年之后，谋杀600万犹太人的伊朗统治者承诺摧毁我们的国家，

2162

01:48:55,228 --> 01:48:58,964

and the response from nearly  
every one of the governments

2163

01:48:58,966 --> 01:49:03,035

represented here

has been utter silence.

几乎每一位政府代表都已经鸦雀无声。

2164

01:49:03,670 --> 01:49:05,471

Deafening silence.

震耳欲聋的沉默。

2165

01:49:13,179 --> 01:49:15,247

Perhaps you can

now understand

也许你现在能理解

2166

01:49:15,982 --> 01:49:19,485

why Israel is not joining you

in celebrating this deal  
为什么以色列不加入来庆祝这项交易。

2167

01:49:20,654 --> 01:49:23,055

History shows  
that America must lead,  
历史表明，美国必须作为领导，

2168

01:49:23,057 --> 01:49:25,991

not just with our might,  
but with our principles.  
不只是我们的力量，也是我们的原则。

2169

01:49:26,927 --> 01:49:30,095

It shows we are stronger,  
not when we are alone,

2170

01:49:30,097 --> 01:49:32,264

but when we bring  
the world together.  
当我们把全世界联系在一起，它显示出我们变得更强大而不是一人独处的渺小，

2171

01:49:33,433 --> 01:49:35,701

Today's announcement marks  
one more chapter

2172

01:49:35,703 --> 01:49:39,972

in this pursuit  
of a safer and more helpful,

2173

01:49:40,340 --> 01:49:43,676

more hopeful world.

Thank you.

今天的声明标志着在这个追求更安全，更乐于助人，更有希望的世界新添一个章节，谢谢。

2174

01:49:44,210 --> 01:49:47,446

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God bless you, and god bless  
the United States of America.  
愿上帝保佑你们，愿上帝保佑美利坚合众国。

2175  
01:49:51,851 --> 01:49:53,619  
NSA source:  
<i> Everyone I know is basically</i>

2176  
01:49:53,621 --> 01:49:55,154  
<i> thrilled with the Iran deal.</i>  
NSA 来源：我所认识的每一个实际上从事制裁和外交工作的人，谈到与伊朗的交易会激动不已。

2177  
01:49:55,722 --> 01:49:57,590  
<i>Sanctions and diplomacy worked.</i>

2178  
01:49:57,958 --> 01:50:00,225  
<i> But behind that deal</i>  
<i> was a lot of confidence</i>

2179  
01:50:00,227 --> 01:50:01,827  
<i> in our cyber capability.</i>  
但是交易背后是对我们的网络能力的自信。

2180  
01:50:02,896 --> 01:50:05,764  
<i>We were everywhere inside Iran.</i>  
<i> Still are.</i>  
我们处在伊朗境内，现在仍然如此。

2181  
01:50:06,633 --> 01:50:08,867  
<i> I'm not gonna tell you</i>  
<i> the operational details</i>  
我不会告诉你的操作细节

2182  
01:50:08,869 --> 01:50:11,503  
<i>of what we can do going forward</i>

---

<i> or where...</i>

我们做什么可以继续前进或其中...

2183

01:50:13,039 --> 01:50:17,142

<i> But the science fiction</i>

<i> cyber war scenario is here.</i>

但科幻网络战争的场景是在这里。

2184

01:50:17,144 --> 01:50:18,611

<i> That's nitro Zeus.</i>

这是硝基宙斯。

2185

01:50:20,046 --> 01:50:22,715

<i> But my concern</i>

<i> and the reason I'm talking...</i>

但是我担心和我说的原因...

2186

01:50:24,217 --> 01:50:27,152

<i> Is because when you shut down</i>

<i> a country's power grid...</i>

是因为当你关闭国家电网...

2187

01:50:28,455 --> 01:50:31,423

<i> It doesn't just</i>

<i> pop back up, you know?</i>

它不只是弹回，你知道吗？

2188

01:50:31,425 --> 01:50:33,225

<i>It's more like humpty-dumpty...</i>

它更像是积重难返，四分五裂

2189

01:50:34,594 --> 01:50:38,464

<i> And if all the king's men</i>

<i> can't turn the lights back on</i>

2190

01:50:38,466 --> 01:50:40,366

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<i> or filter the water</i>

<i> for weeks,</i>

如果有能力的人数周不能将电取回或过滤水，

2191

01:50:40,567 --> 01:50:42,468

<i> then lots of people die.</i>

那么很多人会死亡

2192

01:50:44,738 --> 01:50:46,672

<i> And something</i>

<i> we can do to others,</i>

我们可以向别人做一些事情，

2193

01:50:46,973 --> 01:50:48,507

<i> they can do to us too.</i>

他们可以向我们做。

2194

01:50:49,909 --> 01:50:52,578

<i> Is that something</i>

<i> that we should keep quiet?</i>

有什么事情能让我们保持沉默？

2195

01:50:53,747 --> 01:50:55,414

<i> Or should we talk about it?</i>

或我们应该谈谈吗？

2196

01:50:56,349 --> 01:50:58,250

Gibney:<i> I've gone to many people</i>

<i> in this film,</i>

2197

01:50:58,252 --> 01:51:00,019

<i> even friends of mine,</i>

<i> who won't talk to me</i>

2198

01:51:00,021 --> 01:51:02,187

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<i> about the NSA or stuxnet</i>

<i> even off the record</i>

2199

01:51:02,189 --> 01:51:03,489

<i> for fear of going to jail.</i>

吉布尼：我见过这部影片中的许多人，甚至我的朋友，谁也不会跟我说有关 NSA 或震网的事情，甚至删除了记录，因为怕坐牢。

2200

01:51:03,857 --> 01:51:05,658

<i> Is that fear protecting us?</i>

是恐惧在保护我们？

2201

01:51:06,826 --> 01:51:09,428

<i> No, but it protects me.</i>

没有，但它保护了我。

2202

01:51:10,196 --> 01:51:11,597

<i> Or should I say we?</i>

或者我应该说我们？

2203

01:51:12,932 --> 01:51:14,667

I'm an actor playing a role

2204

01:51:14,669 --> 01:51:16,802

written from the testimony

of a small number of people

2205

01:51:16,804 --> 01:51:18,337

from NSA and CIA,

我是个演员，扮演一个来自国家安全局和中央情报局的人，那是个从少数人的书面证词中所编写出的角色，

2206

01:51:18,672 --> 01:51:21,040

all of whom are angry about

the secrecy

2207

01:51:21,042 --> 01:51:22,775

but too scared  
to come forward.

所有的人都对秘密愤怒，但不敢挺身而出。

2208

01:51:23,109 --> 01:51:24,543

Now, we're forward.

现在我们前进。

2209

01:51:25,812 --> 01:51:28,614

Well, forward-leaning.

好的，一直前行！

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