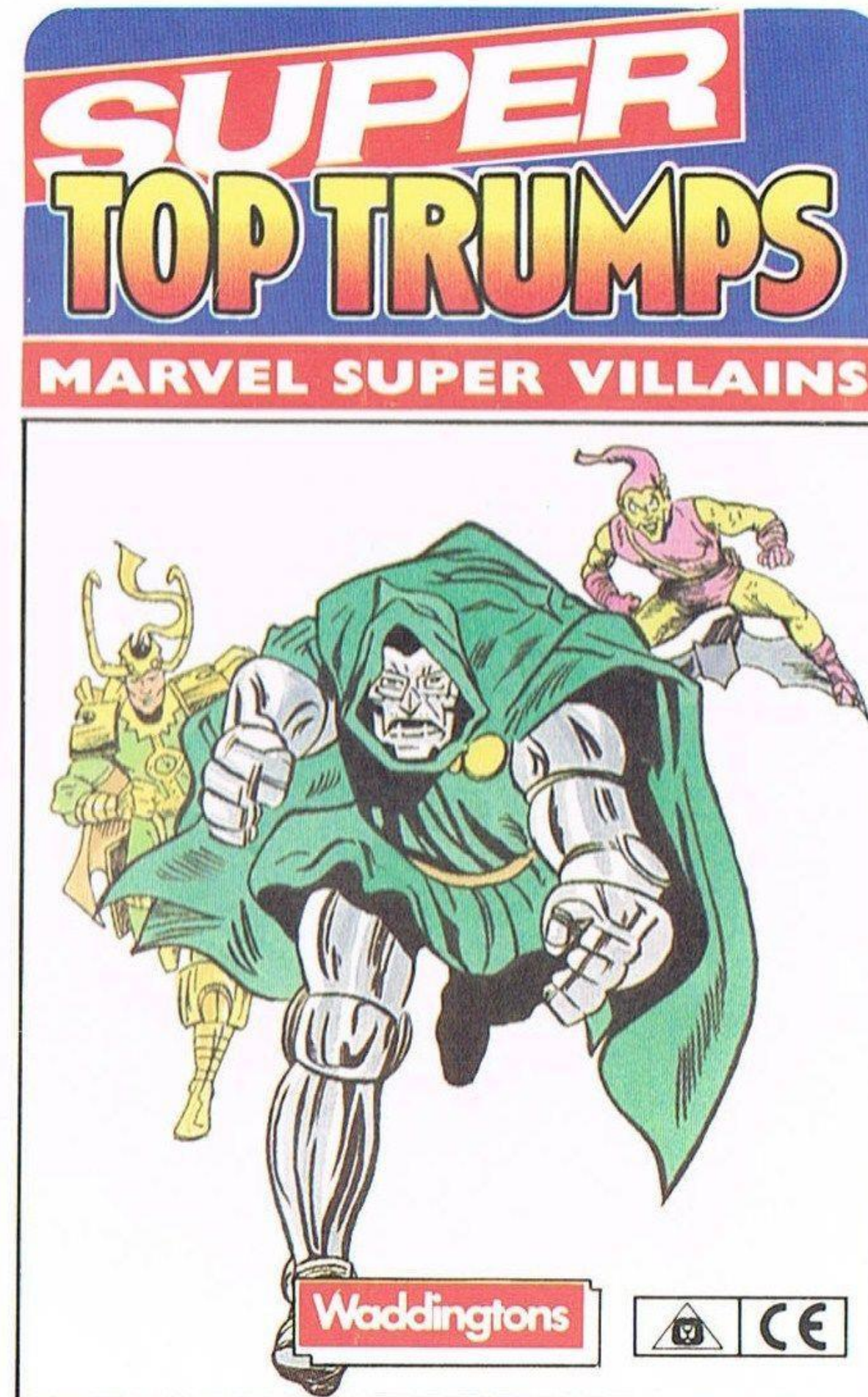



A deep blue night sky filled with numerous small, bright white stars. A faint, hazy band of light, likely the Milky Way, stretches across the lower portion of the image.

***A Long Time Ago  
In A Galaxy  
Far, Far Away...***



***When I was a kid  
in 1980's!***



LOKI™	
	
HEIGHT	6'4"
WEIGHT	525lbs
STRENGTH	45
SUPER POWERS	45
WEAPONS	5



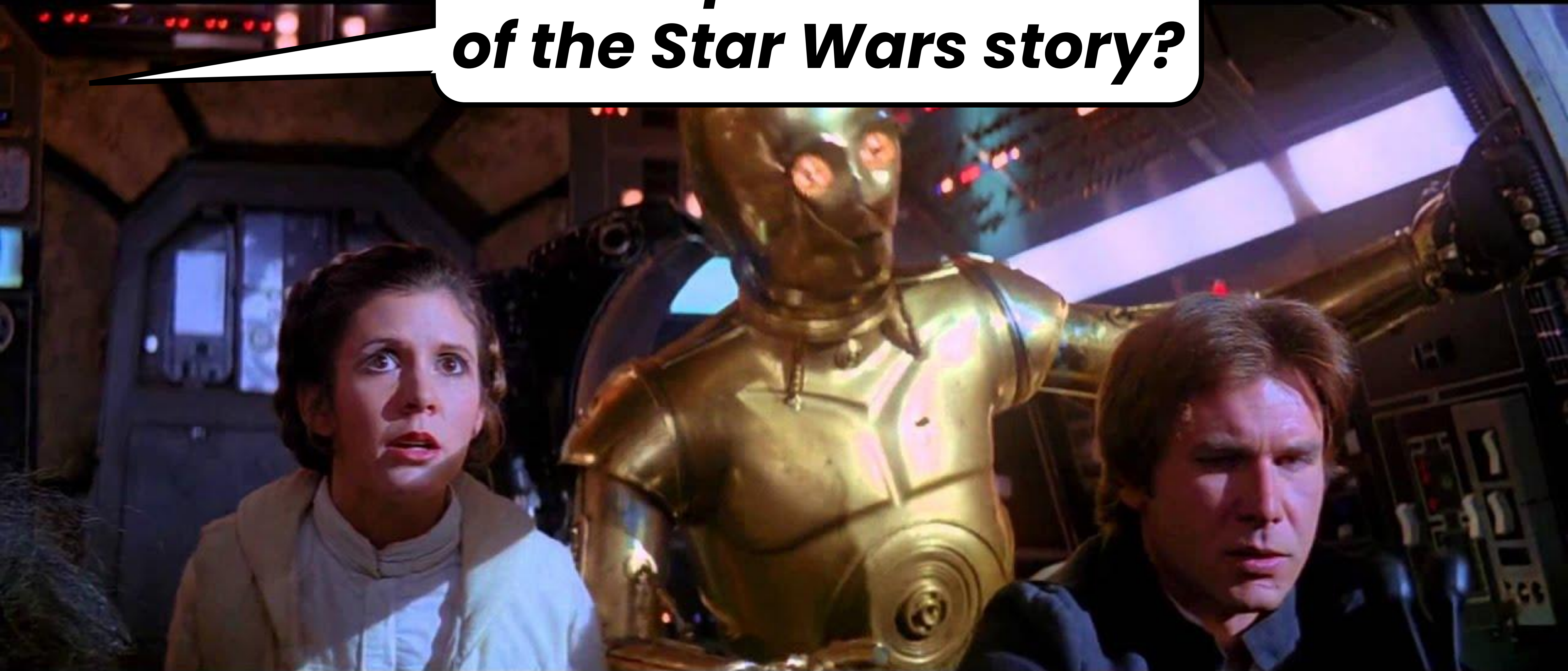
***...Now in my 40's.***

***Could I  
Up my game?***



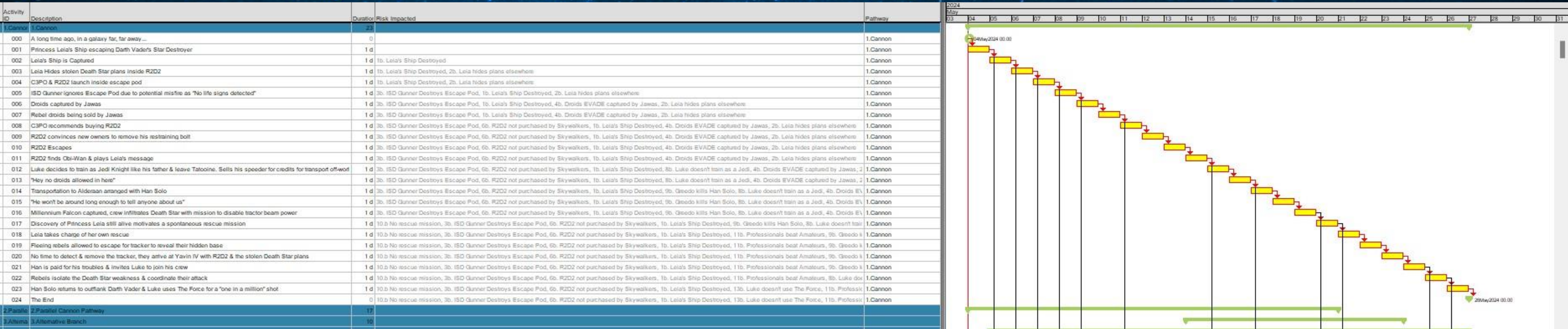


***& Compute the odds  
of the Star Wars story?***





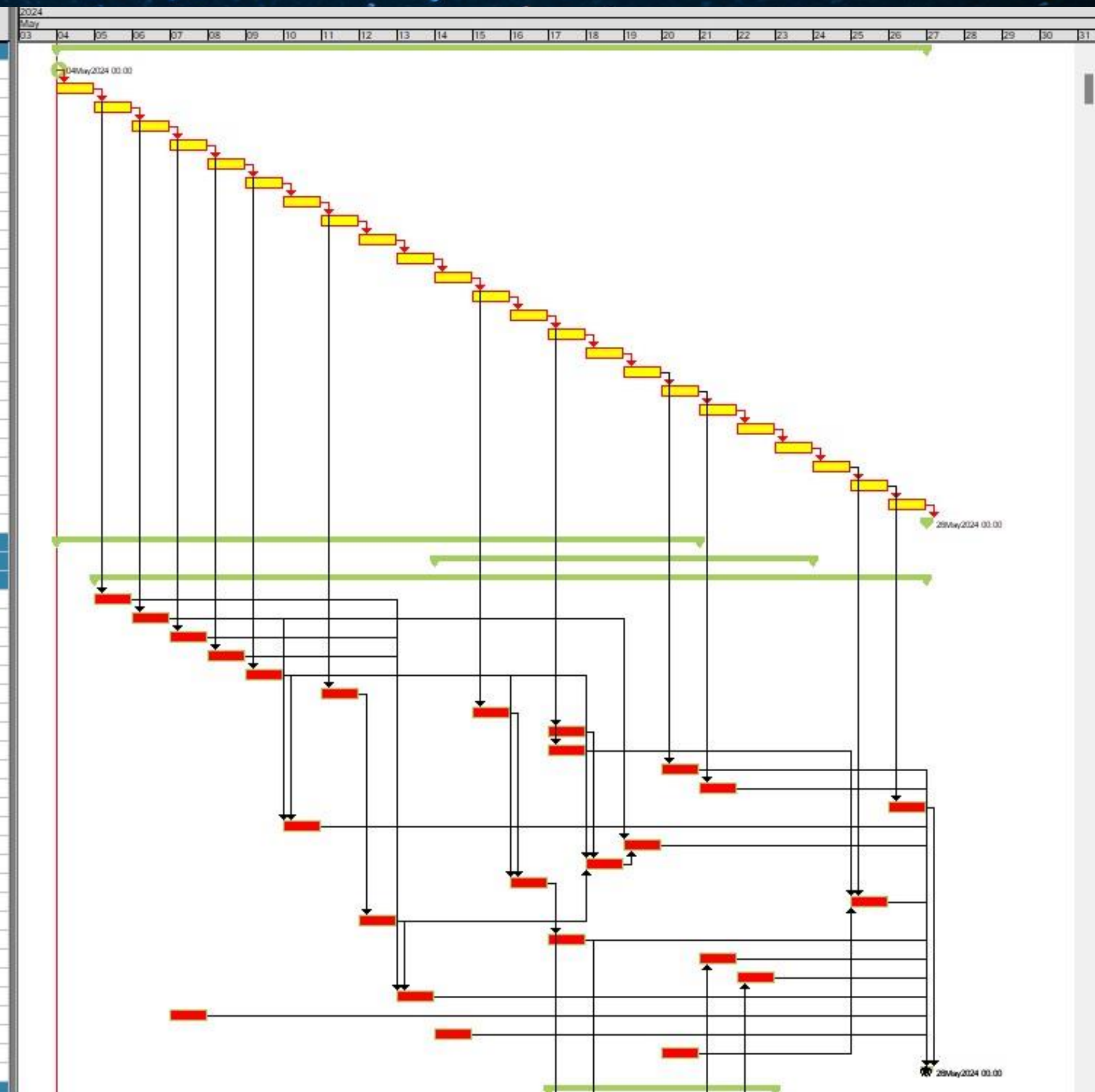
Using Safran Risk?  
...perhaps!





# A movie is just a quasi-linear sequence of story boards

Activity ID	Description	Duration	Risk Impacted	Pathway
1.Cannon				
1.Cannon				
000	A long time ago, in a galaxy far, far away ...	0		1.Cannon
001	Princess Leia's Ship escaping Darth Vader's Star Destroyer	1 d		1.Cannon
002	Leia's Ship is Captured	1 d	1b. Leia's Ship Destroyed	1.Cannon
003	Leia Hides stolen Death Star plans inside R2D2	1 d	1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	1.Cannon
004	C3PO & R2D2 launch inside escape pod	1 d	1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	1.Cannon
005	ISD Gunner ignores Escape Pod due to potential misfire as "No life signs detected"	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	1.Cannon
006	Droids captured by Jawas	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	1.Cannon
007	Rebel droids being sold by Jawas	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	1.Cannon
008	C3PO recommends buying R2D2	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	1.Cannon
009	R2D2 convinces new owners to remove his restraining bolt	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	1.Cannon
010	R2D2 Escapes	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	1.Cannon
011	R2D2 finds Obi-Wan & plays Leia's message	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	1.Cannon
012	Luke decides to train as Jedi Knight like his father & leave Tatooine. Sells his speeder for credits for transport off-world	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 8b. Luke doesn't train as a Jedi, 4b. Droids EVADE captured by Jawas, 2	1.Cannon
013	"Hey no droids allowed in here"	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 8b. Luke doesn't train as a Jedi, 4b. Droids EVADE captured by Jawas, 2	1.Cannon
014	Transportation to Alderaan arranged with Han Solo	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 9b. Greedo kills Han Solo, 8b. Luke doesn't train as a Jedi, 4b. Droids EV	1.Cannon
015	"He won't be around long enough to tell anyone about us"	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 9b. Greedo kills Han Solo, 8b. Luke doesn't train as a Jedi, 4b. Droids EV	1.Cannon
016	Millennium Falcon captured, crew infiltrates Death Star with mission to disable tractor beam power	1 d	3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 9b. Greedo kills Han Solo, 8b. Luke doesn't train as a Jedi, 4b. Droids EV	1.Cannon
017	Discovery of Princess Leia still alive motivates a spontaneous rescue mission	1 d	10.a No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 9b. Greedo kills Han Solo, 8b. Luke doesn't train	1.Cannon
018	Leia takes charge of her own rescue	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 11b. Professionals beat Amateurs, 9b. Greedo k	1.Cannon
019	Fleeing rebels allowed to escape for tracker to reveal their hidden base	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 11b. Professionals beat Amateurs, 9b. Greedo k	1.Cannon
020	No time to detect & remove the tracker, they arrive at Yavin IV with R2D2 & the stolen Death Star plans	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 11b. Professionals beat Amateurs, 9b. Greedo k	1.Cannon
021	Han is paid for his troubles & invites Luke to join his crew	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 11b. Professionals beat Amateurs, 9b. Greedo k	1.Cannon
022	Rebels isolate the Death Star weakness & coordinate their attack	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 11b. Professionals beat Amateurs, 8b. Luke doi	1.Cannon
023	Han Solo returns to outflank Darth Vader & Luke uses The Force for a "one in a million" shot	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 13b. Luke doesn't use The Force, 11b. Profess	1.Cannon
024	The End	0	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 6b. R2D2 not purchased by Skywalker's, 1b. Leia's Ship Destroyed, 13b. Luke doesn't use The Force, 11b. Profess	1.Cannon
2.Parallel				
2.Parallel Cannon Pathway				
3.Alternative				
3.Alternative Branch				
3.Dark-Side				
3.Dark-Side Branch				
002A	Leia's Ship is Destroyed	1 d	3a. ISD Gunner ignores Escape Pod, 1a. Leia's Ship Destroyed	3.Dark-Side Branch
003A	Leia Hides Stolen Death Star Plans Somewhere Else	1 d	1b. Leia's Ship Destroyed, 2a. Leia hides plans in R2D2	3.Dark-Side Branch
003A	R2D2 disabled in crossfire	1 d	1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
005A	ISD Gunner Destroys Escape Pod	1 d	3a. ISD Gunner ignores Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
006A	Droids evade capture by Jawas	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 4a. Droids captured by Jawas, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
008A	R2D2 not purchased by Skywalker family	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 6a. C3PO recommends buying R2D2, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
012A	Obi Wan &/or Luke doesn't want Luke to train as a Jedi	1 d	8a. Luke trains as a Jedi, 3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
014A	"These ARE the droids we're looking for"	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
014A	Greedo Assassinate Han Solo	1 d	3b. ISD Gunner Destroys Escape Pod, 9a. Transportation to Alderaan arranged with Han Solo, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
016A	Han isn't motivated to help rescue the Princess & Obi-Wan's sacrifice enables escape with no direction/destination	1 d	10a. Spontaneous Rescue Mission, 3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 9b. Greedo kills Han Solo, 4b. Droids EVADE captured by Jawas, 2b. Leia hi	3.Dark-Side Branch
018A	1st draft rescue plan by amateurs fails	1 d	10.b No rescue mission, 3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 11a. Leia Takes Charge, 4b. Droids EVADE captured by Jawas, 2b. Leia hides plans els	3.Dark-Side Branch
023A	Luke doesn't use The Force & relies on his targeting computer	1 d	13a. Luke uses The Force, 3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 11b. Professionals beat Amateurs, 4b. Droids EVADE captured by Jawas, 2b. Leia hid	3.Dark-Side Branch
300A	Plans successfully hidden, but become lost to all parties!	1 d	1b. Leia's Ship Destroyed	3.Dark-Side Branch
400A	Plans Recovered by Empire	1 d	1b. Leia's Ship Destroyed	3.Dark-Side Branch
500A	Empire ground forces find & capture R2D2	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
600A	Obi Wan with R2D2 contacts Bail Organa on Alderaan.	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
666	Han Solo not present in the Battle of Yavin	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 12a. Han hangs back, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
800A	R2D2 Destroyed by Empire attack on the Jawa crawler	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
900A	Despite emergence of the Death Star, Bail doesn't reveal the location of the hidden rebel base fearing eavesdroppers	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
9040	Obi-Wan declares his excuses to not join the battle of Yavin, but without a Force-Sensitive pilot available, the assault	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
9050	"Your Powers Are Weak Old Man" - Vader Wins	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
9999	Stolen Death Star Plans Destroyed	1 d	2b. Leia hides plans elsewhere	3.Dark-Side Branch
AB00	Luke rebels & goes to join the Imperial Academy to follow his dream of become a star pilot.	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere, 5a. "One more season"	3.Dark-Side Branch
AB00	Leia reveals location of hidden rebel base	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 7a. Leia resists interrogation, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
AB11	With no credible prospect of payment Han leaves Ben, Luke & the Droids to fend for themselves	1 d	3b. ISD Gunner Destroys Escape Pod, 1b. Leia's Ship Destroyed, 2b. Leia hides plans elsewhere	3.Dark-Side Branch
066	THE EMPIRE WINS	0		3.Dark-Side Branch





**NEVER  
TELL ME  
THE ODDS**





***Spoilers***  
***from 1977***





# ***Character Recap...***





A long time ago, in a galaxy far, far away...

Princess Leia's Ship escaping Darth Vader's ISD



90

Leia's Ship Captured

Leia Hides stolen D.S. Plans inside R2D2



C3PO & R2D2 launch inside escape pod

ISD Gunner ignores Escape Pod due to potential misfire as "No life signs detected"

Luke is on his Uncle & Aunt's Evaporator Farm on Tatooine



Luke is convinced to spy for "One more season" on the farm

Leia Interrogated

Leia resists interrogation & spared as a high-risk strategy to see if she unintentionally reveals the location

L



aptured by Jawas

Rebel droids being sold  
by Jawas

C3PO recommends buying  
R2D2



R2D2 convinces new owners  
to remove his restraining  
bolt

R2D2 Escapes

R2D2 finds Obi-Wan &  
plays Leia's message



Luke decides to train  
as Jedi Knight like his  
father & leave Tatooine.  
Sells his speeder for  
credits for transport  
off-world

"Hey no  
i



no droids allowed  
in here"



Transportation to Alderaan  
arranged with Han Solo



"He won't be around long  
enough to tell anyone  
about us"



Millennium Falcon captured,  
crew infiltrates Death  
Star with mission to  
disable tractor beam  
power

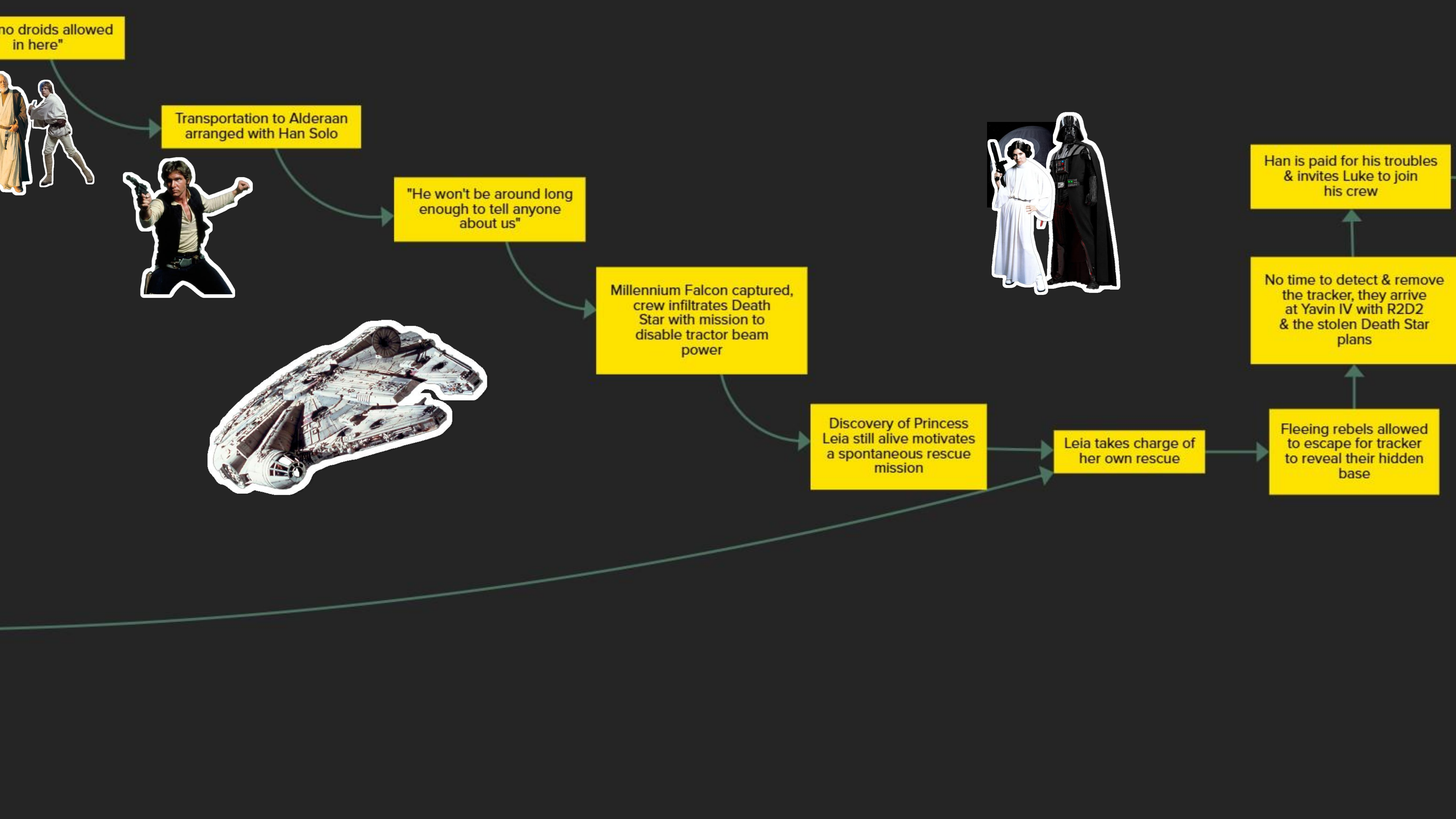
Discovery of Princess  
Leia still alive motivates  
a spontaneous rescue  
mission

Leia takes charge of  
her own rescue

Han is paid for his troubles  
& invites Luke to join  
his crew

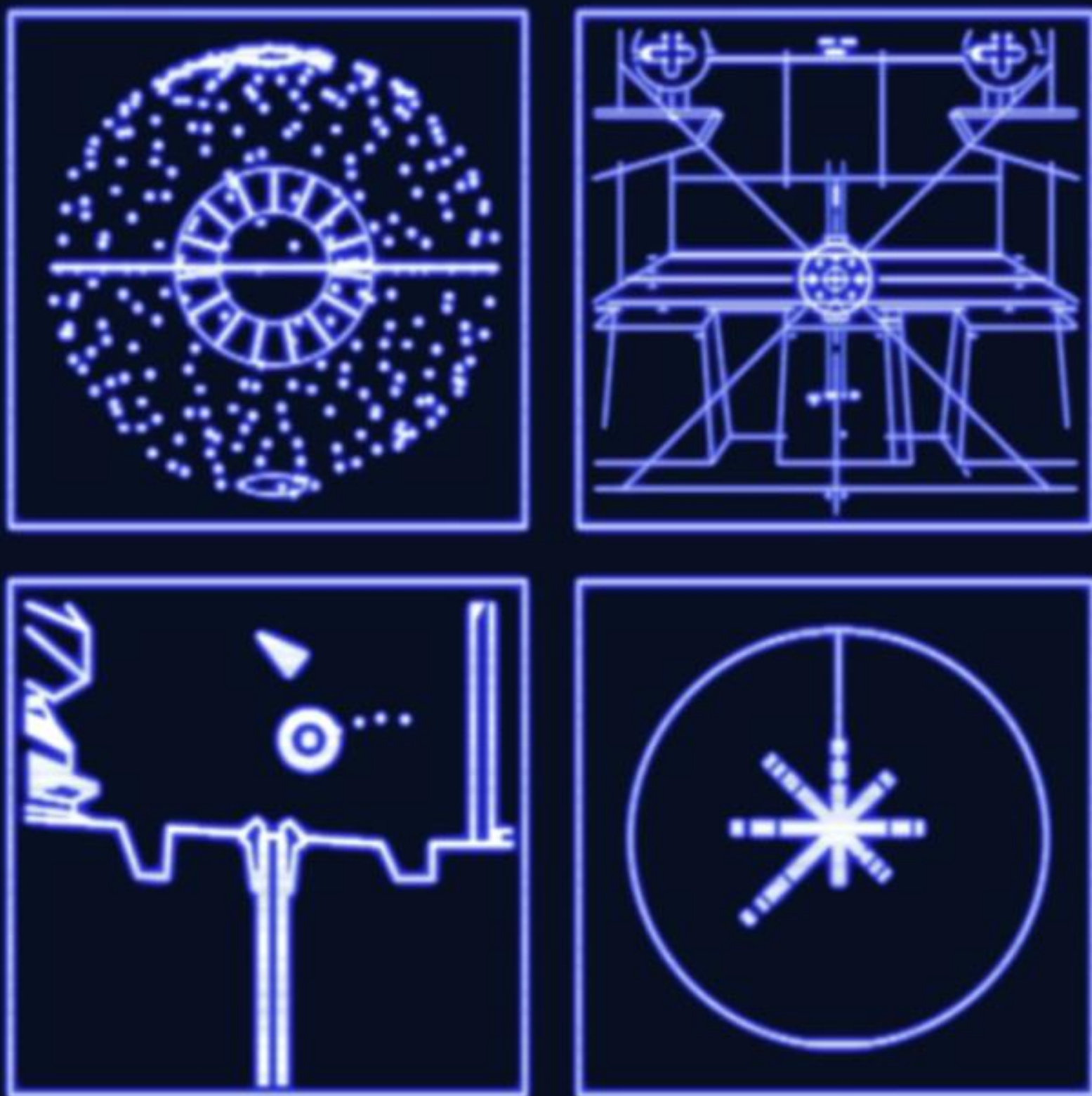
No time to detect & remove  
the tracker, they arrive  
at Yavin IV with R2D2  
& the stolen Death Star  
plans

Fleeing rebels allowed  
to escape for tracker  
to reveal their hidden  
base





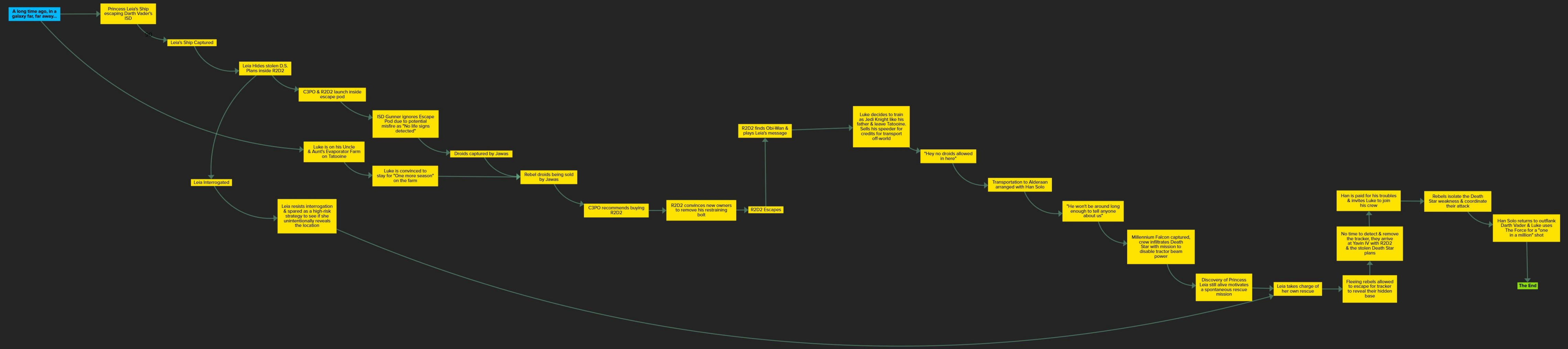
Rebels isolate the Death Star weakness & coordinate their attack





# Critical Path

## Golden Thread



- Legend
- Start
  - Cannon
  - Cannon Ending
  - Alternative Ending (Good Guys Win)
  - Alternative Ending (Bad Guys Win)



# *Critical Path*

# *Golden Thread*

Activity ID	Description
001	Princess Leia's Ship escaping Darth Vader's Star Destroyer
002	Leia's Ship is Captured
003	Leia Hides stolen Death Star plans inside R2D2
004	C3PO & R2D2 launch inside escape pod
005	ISD Gunner ignores Escape Pod due to potential misfire as "No life signs detected"
006	Droids captured by Jawas
007	Rebel droids being sold by Jawas
008	C3PO recommends buying R2D2
009	R2D2 convinces new owners to remove his restraining bolt
010	R2D2 Escapes
011	R2D2 finds Obi-Wan & plays Leia's message
012	Luke decides to train as Jedi Knight like his father & leave Tatooine. Sells his speeder for credits for transport off-world
013	"Hey no droids allowed in here"
014	Transportation to Alderaan arranged with Han Solo
015	"He won't be around long enough to tell anyone about us"
016	Millennium Falcon captured, crew infiltrates Death Star with mission to disable tractor beam power
017	Discovery of Princess Leia still alive motivates a spontaneous rescue mission
018	Leia takes charge of her own rescue
019	Fleeing rebels allowed to escape for tracker to reveal their hidden base
020	No time to detect & remove the tracker, they arrive at Yavin IV with R2D2 & the stolen Death Star plans
021	Han is paid for his troubles & invites Luke to join his crew
022	Rebels isolate the Death Star weakness & coordinate their attack
023	Han Solo returns to outflank Darth Vader & Luke uses The Force for a "one in a million" shot
024	The End

This diagram illustrates the project schedule for Star Wars Episode IV, mapping 24 activities against a 27-day timeline. Key decision points are highlighted with yellow segments on activity bars and indicated by five large blue arrows pointing left.

Decision Point	Approximate Day Range
1	Day 03 - 04
2	Day 07 - 08
3	Day 10 - 11
4	Day 14 - 15
5	Day 22 - 23



10  
%

- *Leia's Ship Escaped*
- *Leia's Ship Destroyed*

A long time ago, in a galaxy far, far away...

Princess Leia's Ship escaping Darth Vader's ISD

90  
%

Leia's Ship Captured

Leia Hides stolen D.S. Plans inside R2D2

*Escape Pod Destroyed*

C3PO & R2D2 launch inside escape pod

80  
%

ISD Gunner ignore Pod due to pot misfire as "No life detected"

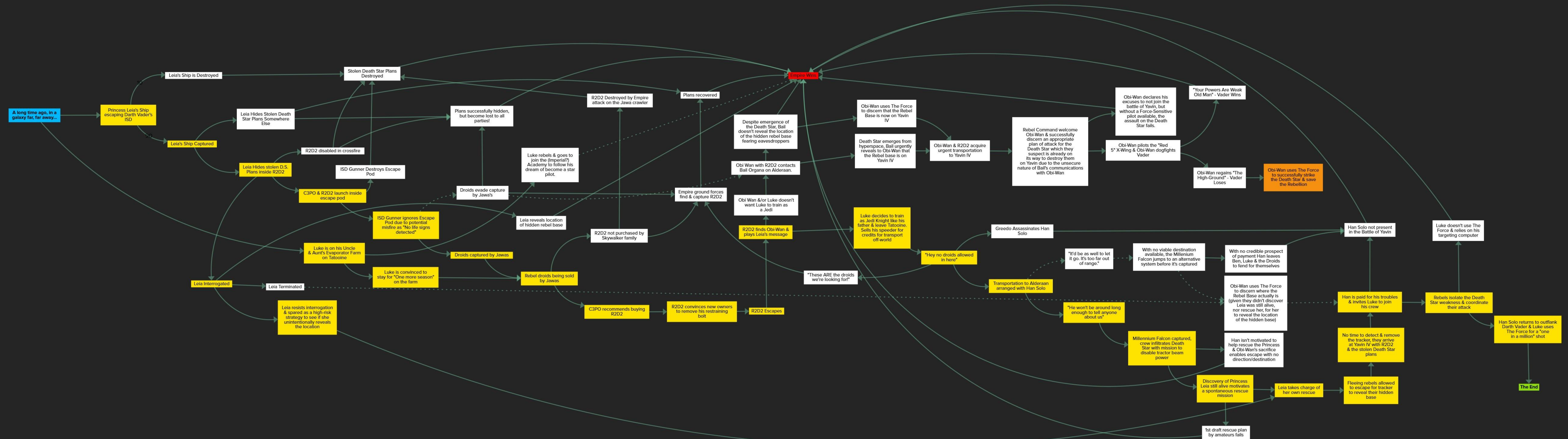
Luke is on his Uncle & Aunt's Evaporator Farm on Tatooine

Leia Interrogated

Luke is convinced to stay for "One more" on the farm



# LOTS of *Key Decisions*

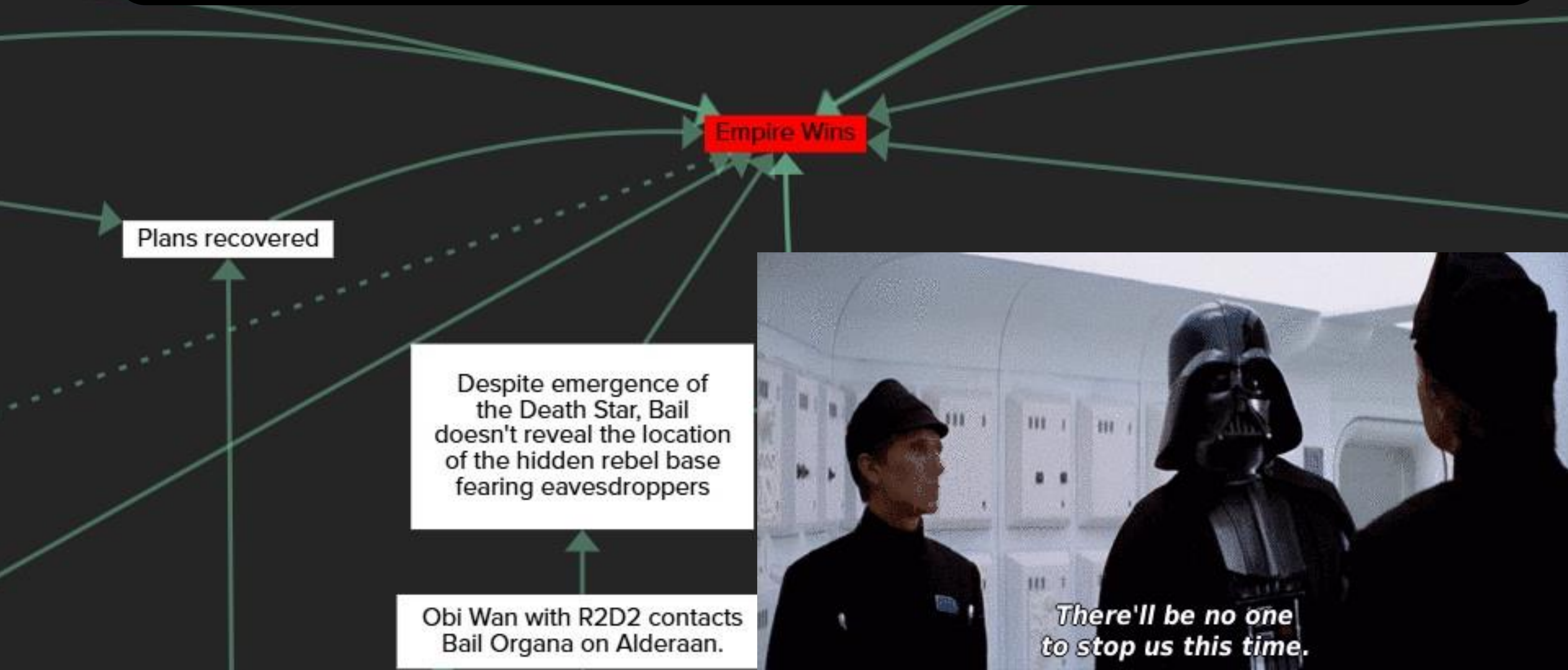


# LOTS of *Convenience*

- Legend
- Start
  - Consequence
  - Choice
  - Alternative
  - Alternative

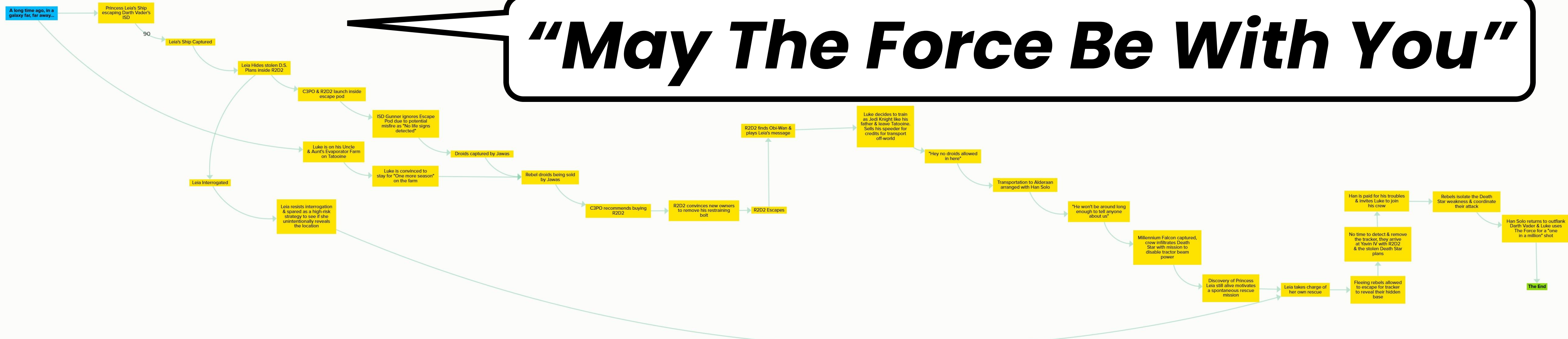


# ***LOTS of Ways The Bad Guys Win!***

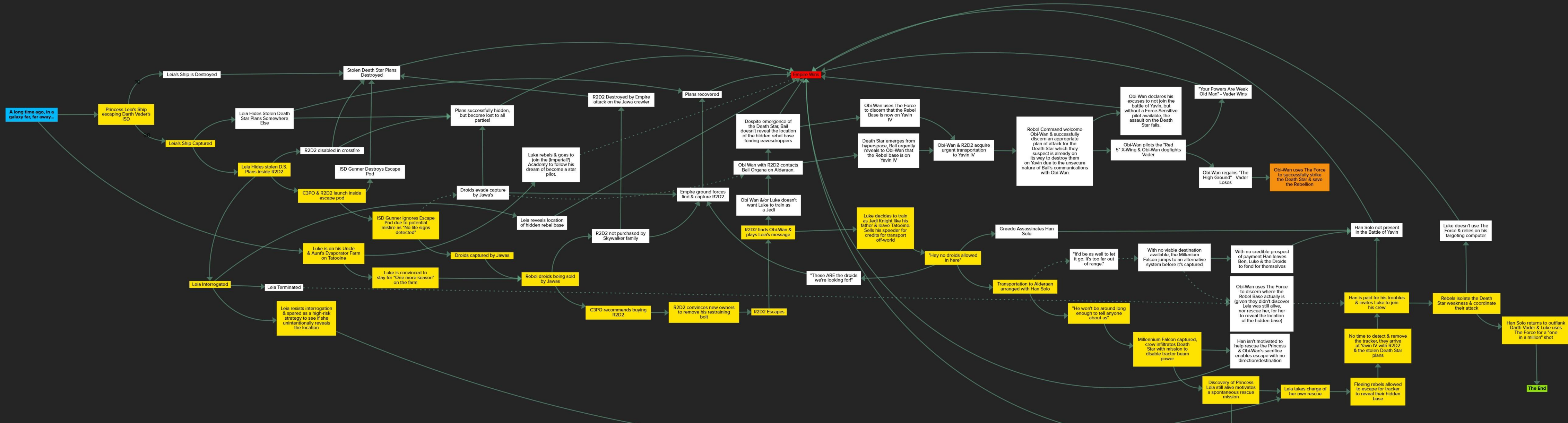




# "May The Force Be With You"

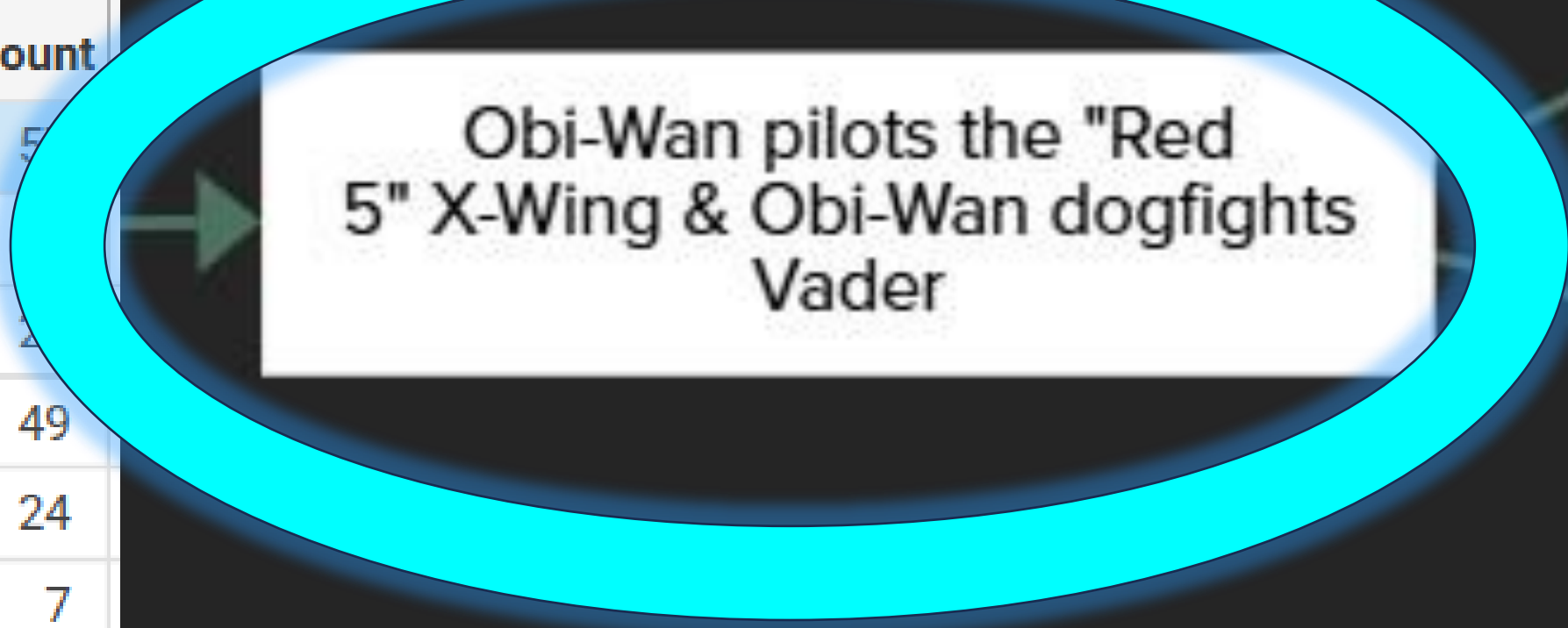


# Entropy = "Dark Side"





Id	Risk Type	Probability	Mappings Count
01b. Leia's Ship (Tantive IV) Destroyed instead of captured	Non-Existence ▾	10%	5
02b. Leia hides the Death Star plans elsewhere	Non-Existence ▾	5%	2
02b.i R2D2 disabled in crossfire (on the Tantive IV)	Non-Existence ▾	20%	2
03b. ISD Gunner Destroys Escape Pod carrying the Droids	Non-Existence ▾	80%	49
04b. Droids EVADE captured by Jawas	Non-Existence ▾	40%	24
04b.i Plans hidden from Everyone!	Non-Existence ▾	25%	7
04b.ii Empire finds R2D2 on Tatooine	Non-Existence ▾	25%	7
04b.iii R2D2 finds Obi-Wan	Non-Existence ▾	50%	0
05b. Luke Rebels (& joins "The Academy")! a.k.a Joins the Empire!!!	Non-Existence ▾	5%	2
06b. R2D2 not purchased by Skywalkers	Non-Existence ▾	20%	24
07b. Leia reveals Rebel base location during her interrogation	Non-Existence ▾	20%	19
08b. Luke doesn't train as a Jedi - #Reasons	Non-Existence ▾	1%	14
09b. Greedo kills Han Solo	Non-Existence ▾	5%	12
10a. Spontaneous Rescue Mission is Launched	Non-Existence ▾	99%	1
10b. No rescue mission (Han - "No Reward is worth This!")	Non-Existence ▾	1%	9
11a. Leia Takes Charge	Non-Existence ▾	75%	1
11b. Professional Armed Forces beat Spontaneous Amateurs	Non-Existence ▾	25%	8
12a. Han hangs back ("I know what I'm doing")	Non-Existence ▾	60%	1
12b. Han bugs out (takes the money & runs)	Non-Existence ▾	40%	2
13a. Luke uses The Force	Non-Existence ▾	99%	1
13b. Luke doesn't use The Force (uses the Targeting Computer)	Non-Existence ▾	1%	2
14a. R2D2 gets to escape pod	Non-Existence ▾	80%	1
1a. Leia's Ship Captured	Non-Existence ▾	90%	1
2a. Leia hides plans in R2D2	Non-Existence ▾	95%	1
3a. ISD Gunner Ignores Escape Pod	Non-Existence ▾	20%	2



Will to let  
far out  
."

With no viable destination  
available, the Millennium  
Falcon jumps to an alternate  
system before it's captured



**They,  
Execute  
Princess Leia** + **Also,  
R2D2 Evaded Capture  
and Takes Leia's  
Message Direct to  
Obi-Wan Kenobi**

**WHAT!**

**Hello  
There**



**Obi-Wan asks Leia's Father to Reveal the Location of the Hidden Rebel Base to Him.**



**There's No Time to Find Luke & Bring Him Up To Speed, or Argue with His (still alive) Uncle**

**We're all going to die if that R2 Unit doesn't get to Yavin!**

**Sir!**  
**We're detecting a MASSIVE object dropping out of hyperspace!**

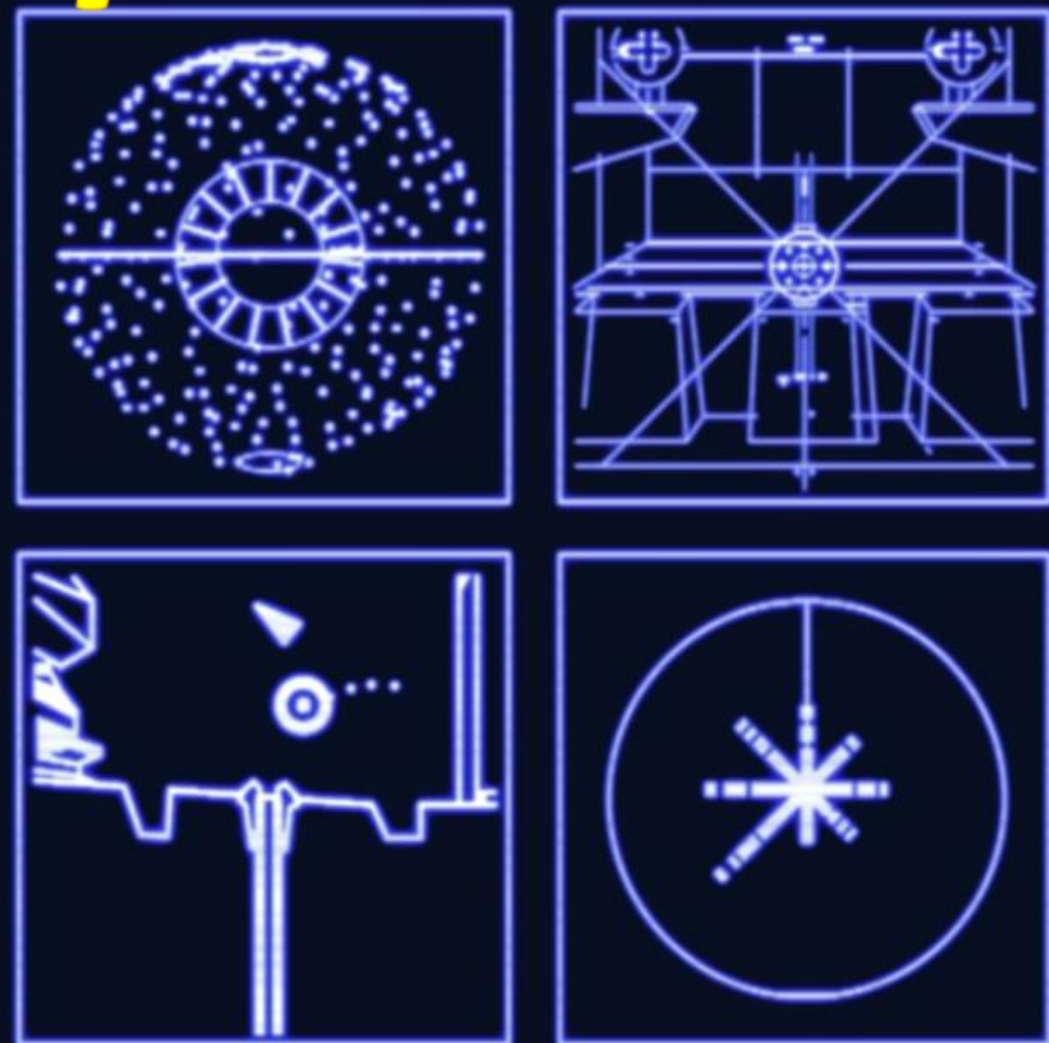
**Passage to Yavin**

**AND NO QUESTIONS ASKED.**

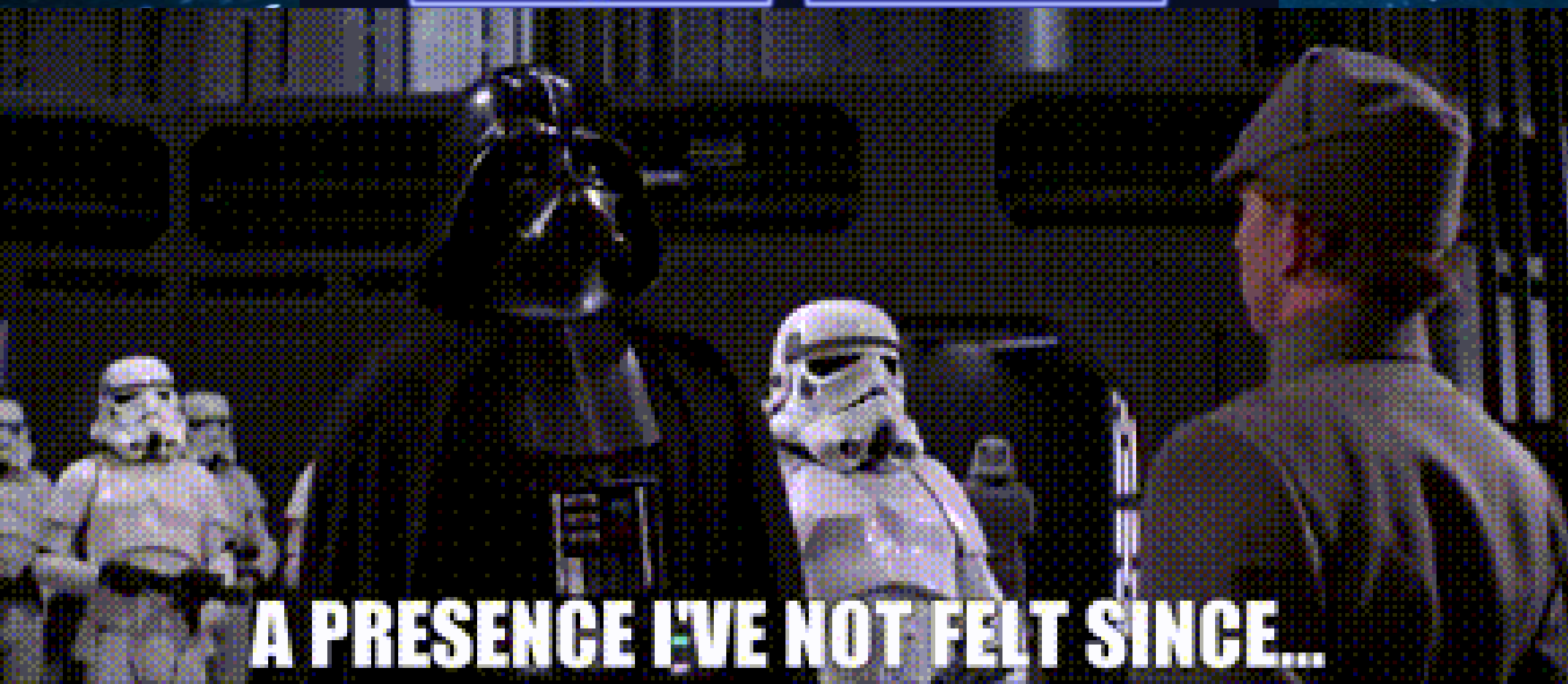




***The Death Star  
Weakness is Identified  
and Obi-Wan prepares  
to pilot 'Red 5'***



***Your  
Powers  
Are  
Weak  
Old  
Man!***



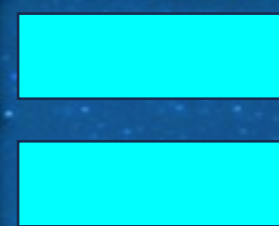
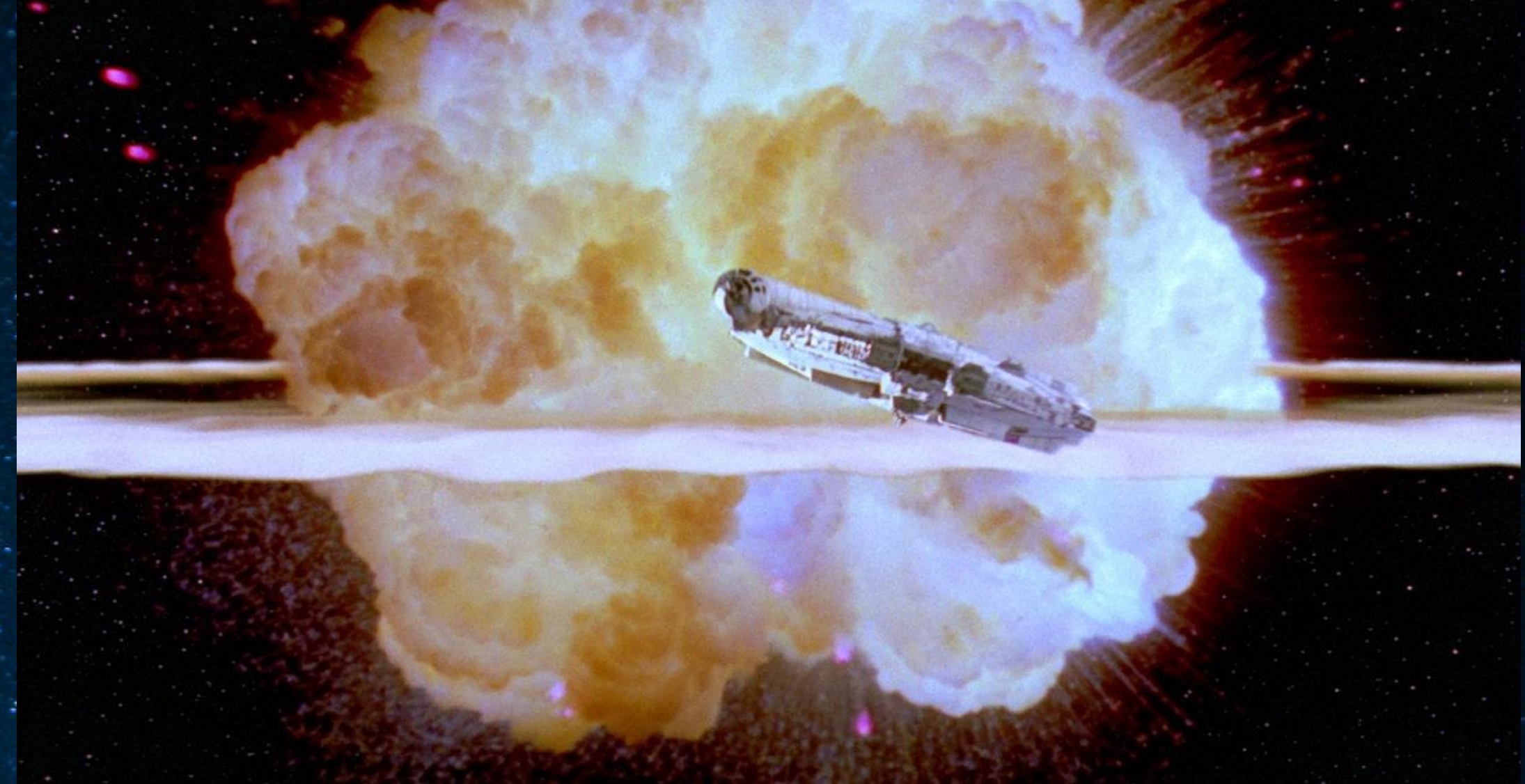




***I have the "High-Ground"  
!  
Let's blow this thing and  
go home!***



WAT?



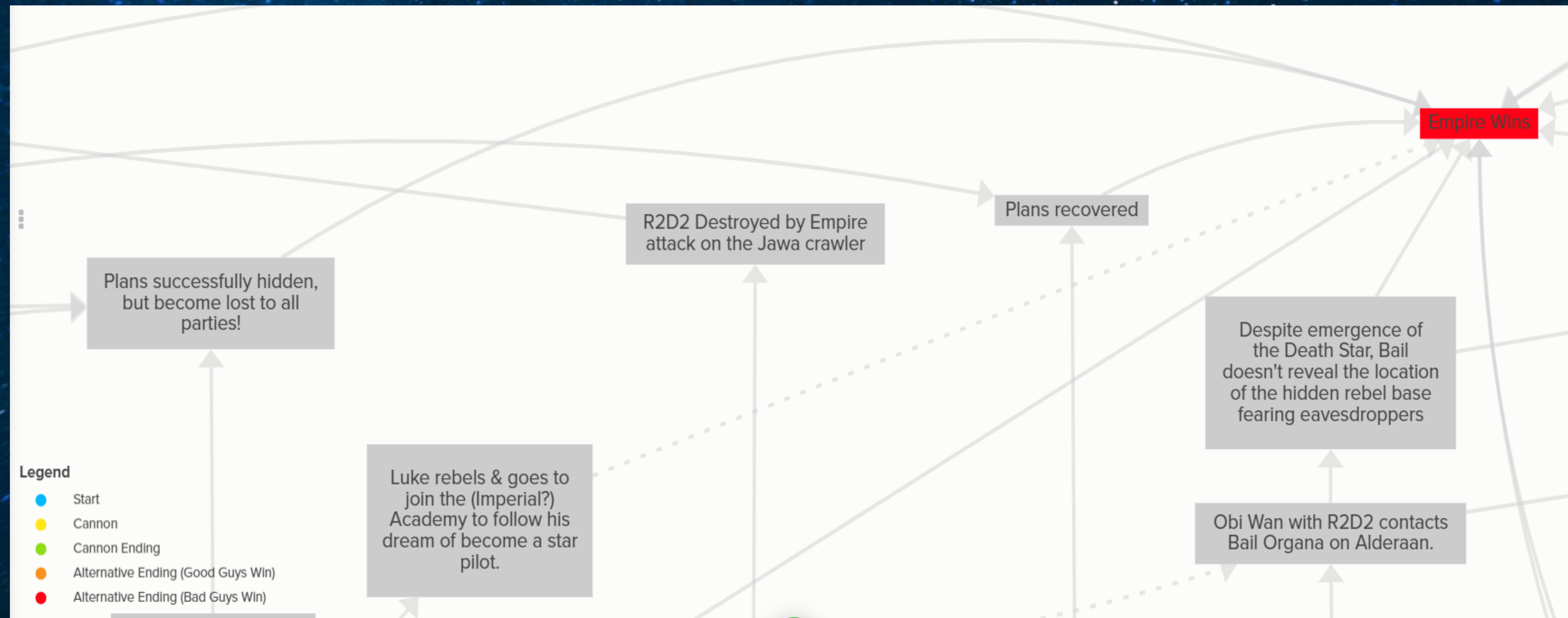
***Luke's true identity  
remained hidden to the  
Empire.  
New possibilities are  
opened up for the  
sequel...***



***There is an Irresistible Gravitational Pull  
Towards Chaos.***

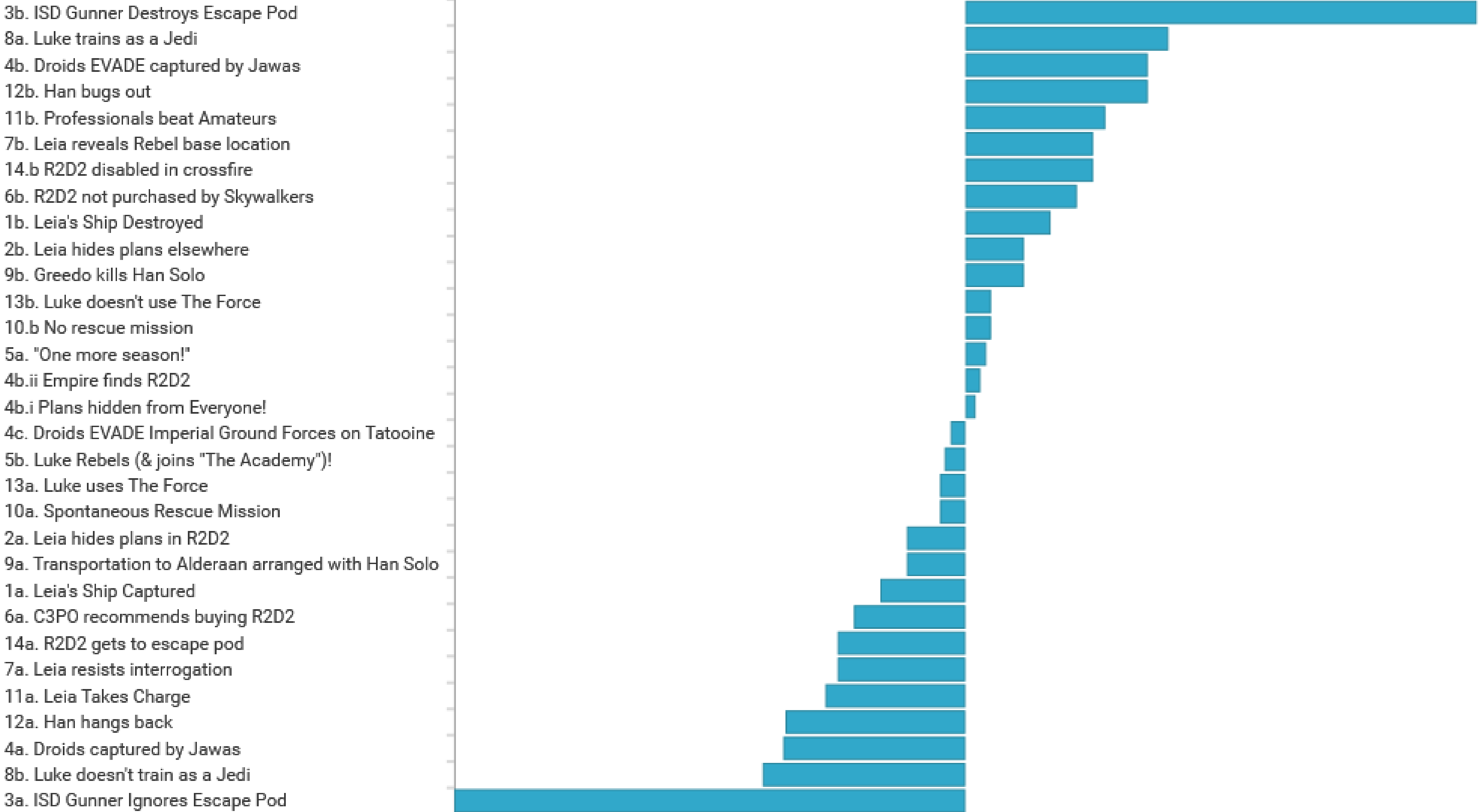
***Towards the  
Undesired Outcome***

***Where the Empire Wins!  
(or Your Project Fails)***





Risks driving Project





***According to  
my simple  
model.***

***The Empire  
Really Did Have  
The Odds  
Stacked  
In Their Favor!***



NEVER TELL ME THE ODDS



**Only in 43 out of 2,000 Iterations  
Did The 'Cannon' Ending Occur!**

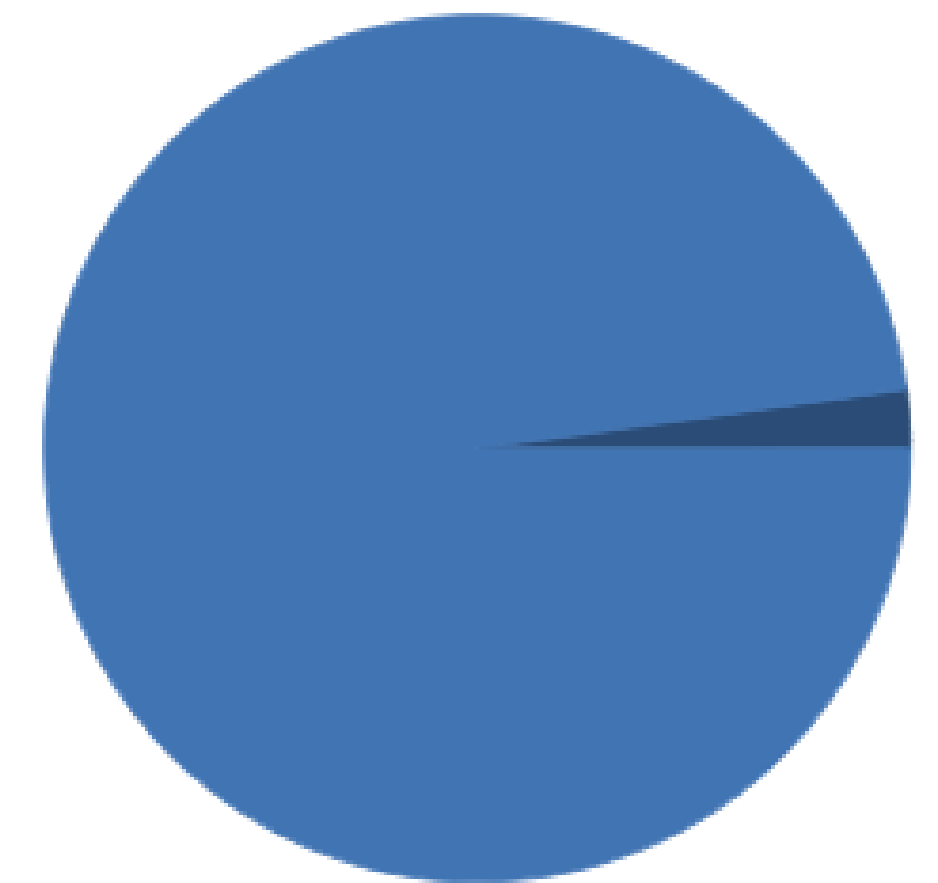
**The Empire won in 1,955 outcomes**

**With the  
"Obi-Wan Branch"  
yielding a surprise ending in  
JUST TWO**



Chances for success	45
Chances against success	2000
Probability of winning	2.20 % ▾
Probability of losing	97.80 % ▾

Winning vs Losing



■ Probability of winning (%)  
■ Probability of losing (%)

Odds conversions

Fractional odds: 400/9

Decimal odds 45.44