# MOVIES & TV

# Is there any real-world "science" behind R2-D2's computer interfacing arm?

Asked 9 years, 3 months ago    Modified 8 years, 3 months ago    Viewed 5k times

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**12**

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I read the news today about R2-D2 and was fascinated by the robotic arm it had. There's actually a wikia page for it (SCOMP link) but doesn't explain much of how it theoretically works. It's also a bit "weird" since it rotates, given the fact that most devices I know including very old ones like those wide printer cables, are just pins in contact with holes that have pins.

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So what's the reasoning behind R2-D2's SCOMP link design? What's the inspiration behind the design of that specific arm? Is there hardware in real life that influenced its design?

star-wars

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edited Oct 21, 2015 at 17:26
Giacomo1968
**6,940**    4    35    65

asked Oct 20, 2015 at 15:50
Joseph
**231**    2    7

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6    Might not be enough for an answer, but it always reminded me of turning the combination lock of a safe. Since R2D2 was mainly used to lock/unlock doors, maybe they were trying to anthropomorphize the process. – DaaaahWhoosh  Oct 20, 2015 at 17:53

3    Loosely related to what @DaaaahWhoosh postulated, I think the rotation was also to visually signal that R2D2 was actively doing something. – Erik  Oct 20, 2015 at 20:34

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## 4 Answers

Sorted by:  Highest score (default) ⬍

**11**

It's also a bit "weird" since it rotates, given the fact that most devices I know including very old ones like those wide printer cables, are just pins in contact with holes that have pins.

You are thinking of this as pure data connection interface—such as a simple data cable connection—but to my mind I see it as a more of a combined communication method where the core connection passes data but the rotating motion of the arm allows R2 to traverse and "dial" different available systems on that connection.

### A rotary telephone dial.

As someone who saw "Star Wars" as a 9-year old kid when it was first released in 1977 R2-D2 connecting to a computer that way always reminded me of a plug being inserted into a socket combined with a rotary phone being dialed.



While the idea of rotary phones seem like something truly ancient nowadays—such as in this YouTube video where someone describes their rotary phone to be an "antique"—the reality is that in the early-to-mid 1970s when the first "Star Wars" film was being conceived, designed and made, rotary phones were very common.

Everyone I knew in New York City grew up with rotary phones and many people only saw/ dealt with touch-tone phones at offices and workplaces where Bell Telephone first rolled them out. As explained on this page on WiseGeek focused touch tone phones:

> Deployed to the business community initially, the technology quickly spread to the private sector. By 1979, the touch tone phone was the telephone of choice for most users in many parts of the world. With the deregulation of the telephone industry in the United States in 1984, the touch tone telephone became even more

important.

This 1979 to 1984 timeframe dovetails nicely with the original "Star Wars" trilogy since "Return of the Jedi" came out in 1983. Meaning that throughout the span of the first three films rotary dial phones were very commonplace in the real world and only became *less* common after "Ma Bell" was broken up in 1984 and touch tone phones became more and more commonplace in the world.

## Computer modems with acoustic couplers.

Also note that computer modems with acoustic couplers—where a standard phone handset was placed in an acoustic coupler connected to a computer—were still commonplace in the 1970s. While in many of these acoustic coupler modem setups, the computer itself would do the "dialing" of a number via its data connection, you could theoretically still use the dial on the base of such a phone to dial a number to a remote system while the "data connection" of the handset in the acoustic coupler was still in place:



## Dial on a combination lock.

I believe looking at how a combination lock works would also work into the real-world analogy of what R2-D2 is doing. Many times R2-D2 is basically trying to get a door open or reveal some magical "maps" in places like the Death Star to help our heroes find things:

It's a fairly common TV and movie trope to see some safe-cracker hunched over a lock and listen to the tumblers carefully while he/she attempts to crack open a safe. Just looking at R2-D2's short—and sometimes visual "hunched"—posture while doing tasks like this, one can easily imagine a visual analogy to safecracker doing his/her safecracking work.

## Additional in-universe R2 droid arm details for context.

Remember: R2-D2 has more than one arm/attachment/device/intreface/doohickey/can-opener. For example, this comment to another answer by "cde" states:

> ...the times he gets electrocuted or shocked by a port and gets sent flying, means it doesn't lock.

Err... R2-D2 has many different things shoved into his cylindrical chassis as these blueprints show and here is a zoomed in and cropped version of the relevant bits of info:
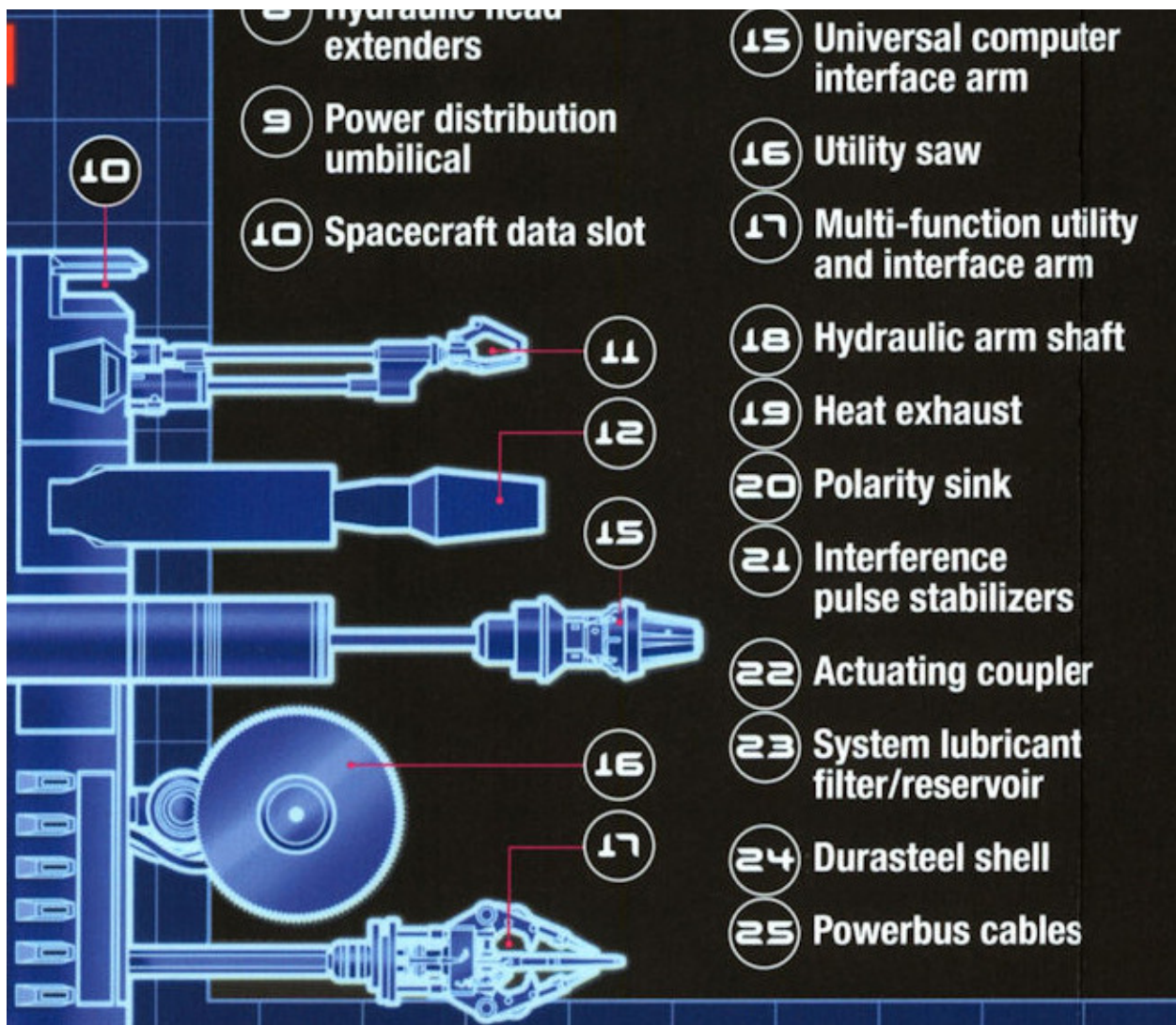
Note that item number 15 is the "Universal computer interface arm" (aka: the SCOMP link) but item 17 is described as the "multi-function utility and interface arm." In "The Empire Strikes Back" when C-3P0 inadvertently advises R2-D2 to connect to a "computer terminal"—which is actually a power socket—you can see that R2-D2 is clearly not using his SCOMP link arm but rather that "multi-function utility and interface arm" to test the port before doing anything.

So R2-D2 trusts C-3P0 but is still wary of his advice. Ultimately, this effort doesn't stop him from getting shocked by the power socket, but still... He didn't just blindly stick his data connection into unknown socket just because some bumbling protocol droid told him to do so:

Also this answer states:

> When he is co-piloting a starfighter through his interface arm, you don't want him
> to accidentally lose connection during a fight.

Well, I'm not too sure that is the case. Looking at the blueprints you see there are a few
different "spacecraft" related things such as item 10, the "spacecraft data slot" and item
12 "spacecraft linkage and control arms." Given the specificity of those names, it seems
that when an R2 unit is co-piloting a spacecraft, those connections would come into play
rather than the SCOMP link.

1   Eventually had to search for the acoustic coupler. Definitely not my generation. Great answer!
Share  Improve this answer                    edited Apr 13, 2017 at 12:54        answered Oct 21, 2015 at 18:09
–   Joseph   Oct 21, 2015 at 20:31
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                                               Community Bot                       Giacomo1968
                                               1                                   6,940   4   35   65

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I always thought it was meant to replicate what the old mainframes did. You'll note the
jerk-like motion of the rotating tapes, which is similar to what R2D2's rotoscoping arm did.
I guess they were looking for something believable, based on the current technology at
that time.

**8**

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                                                                    answered Oct 20, 2015 at 16:52
                                                                    Johnny Bones
                                                                    60.9k    25    177
                                                                    295

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1   Damn galaxy has magic and FTL drives, but never developed wifi... how tvtropes.org/pmwiki/
    pmwiki.php/Main/Zeerust – cde Oct 20, 2015 at 17:44

2   Could you imagine if R2D2 was shown using WiFi?? What a charade that woulda been! Humanoids
    can use magic, but computers?? That'd have been ridiculous. – Johnny Bones Oct 20, 2015 at
    17:45

    Well, 2001 had tablets, that was 68. Radio and TV existed OTA for 50 years before A New Hope.
    Satellite data kicked off in early 60s. Star Trek had Communicators and Tricorders. It would not
    have been a stretch of the audience's disbelief. – cde Oct 20, 2015 at 18:01

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Maybe they based this design decision on something like the BNC connector, which needs a quarter turn to fully connect.

One advantage for using such a connection is, that it isn't as easily disconnected. Remember that R2D2 is an astromech. When he is co-piloting a starfighter through his interface arm, you don't want him to accidentally lose connection during a fight.

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answered Oct 20, 2015 at 16:01

Thomas Weinbrenner
**505**    3    12

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Ahh, coaxial cables and similar cables. Makes sense. – Joseph  Oct 20, 2015 at 16:25

1    Except the connector doesn't have any latches, and worse, the times he gets electrocuted or shocked by a port and gets sent flying, means it doesn't lock. And the entire port rotates, with multiple parts, not just the connector. – cde Oct 20, 2015 at 16:30 ✎

Could be magnetic tho. I think I've seen it snap into place. – Joseph  Oct 20, 2015 at 16:39

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It's most like a Torpedo Data Computer's interface with the torpedo. The torpedo's gyro angles were continuously updated with rotating shafts connected to the torpedo while inside the tube. They were constantly in motion in both directions.

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answered Nov 1, 2016 at 21:32

Peter
**19**    1

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1    Thank you for assisting the community. Ideas for framing an answer may include describing your sources along with a synopsis of what they said, and/or adding links to the resources and visuals you've found. I hope you enjoy participating. – John Nov 1, 2016 at 22:45