Sigilion.net

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About Me

O wad some Pow'r the giftie gie us
To see oursels as ithers see us!

Robert Burns, *To a Louse*[1]

My name is Ian Leith. I am a software engineer, with some somewhat idiosyncratic views on the subject. I currently work in the financial sector (and have for all of my professional career). I like to read and while I certainly don't claim any particular literary insight I have taken to writing down my thoughts about things I've read[2], if only to stop them circling round in my head.

All views expressed in this site are my own, and not those of my employer (except by coincidence).

[1] https://en.wikisource.org/wiki/The_Poetical_Works_of_Robert_Burns/To_a_Louse,_on_seeing_one_on_a_Lady%27s_Bonnet_at_Church

[2] p. 14

About This Site

Semantics

The overall structure of this site is what is sometimes called a "digital garden", an evolving web of hypertext pages covering whatever it is I had thought worth writing about. This isn't quite the same as a blog, the post time isn't the primary index of the content. Also the pages are *mutable*, if I have further thoughts on a topic I'm going to update the existing page, not write a new post referencing the existing one.

In terms of actual content, at the time I write this the books section[1] contains all of the currently written pages, though I imagine I will write some programming content before too long.

"Syntax"

I'll be honest, my reason for starting work on this site was much more about fiddling around with the system to produce it than it was about writing the content.

The site is fully static in production, with neither server side code nor any javascript. It is rendered using the `Pollen`[2] publishing system.

Stylistically, the layout css is mostly taken from `tuft-css`[3,4], the colour scheme is Solarized[5,6], and the fonts are Heliotrope[7], Equity[8], and `Triplicate`[9] by Mathew Butterick[10].

[2] `https://docs.racket-lang.org/pollen/`

[3] `https://github.com/edwardtufte/tufte-css`

[4] Under the MIT License

[5] `https://ethanschoonover.com/solarized/`

[6] Under the MIT License

[7] `https://mbtype.com/fonts/heliotrope/`

[8] `https://mbtype.com/fonts/equity/`

[9] `https://mbtype.com/fonts/triplicate/`

[10] Proprietary, I have a licence(`https://sigilion.net/fonts/MBTypeFontLicense.pdf`) covering my use on this site

TODOs

- latex spacing
- rss/atom
- format changer
- home button
- tag index
- backreferences
- dark mode
- book cover
- logo?
- pages:
    - Digial gardening
    - AI
    - Vibe coding
    - Programming Language Qualities
- reviews:
    - finish terra ignota
    - Discworld
    - Guy Gavriel Kay
    - Heyer

Programming

Optics from a Different Perspective

Why lenses don't compose backwards

> *"How do I get to Aberdeen from here?"*
>
> *"If I were going to Aberdeen, I wouldn't start from here."*

I'm not sure that "lenses compose backwards" is still a live view. That said, I think this view is tied to some broader misunderstandings that are easy to fall into. The fact is that while lenses/optics are a really useful abstraction the historical (and often pedagogical) route leading up to them is really odd. We usually start by talking about *getters* and *setters*, but those are actually a somewhat awkward aspect of modern optics. My goal here is to present a different route to lenses that I think more directly captures the intuition behind them.

Semantic Editor Combinators

[1] http://conal.net/blog/posts/semantic-editor-combinators

The starting point for this approach is an old Conal Elliott blog post about what he calls Semantic Editor Combinators[1]. The basic idea is that when we think about functions like:

```
map   :: (a -> b) -> [a]   -> [b]
first :: (a -> b) -> (a,c) -> (b,c)
head  :: (a -> a) -> [a]   -> [a]
age   :: (Int -> Int) -> Person -> Person
```

we shouldn't think of them as two argument functions that happen to be curried as a quirk of Haskell, but as genuinely single argument functions that transform an "edit" from operating on a "smaller" structure to operating on a "larger" structure. Furthermore, we should be perfectly happy to compose these: `map . first . map . first` takes an edit on a small structure and transforms it into an edit on a (much) larger structure.

It's worth noting that SECs can be monomorphic (like `age`), polymorphic but type preserving (like `head`), or polymorphic and type changing (like `map` and `first`).

It's also worth noting that—although it doesn't show up in the types—some SECs call their argument function multiple times (like `map`), and some only once (like `first`).

Adding Effects

One shortcoming of SECs is that in a pure language like Haskell a decent chunk of the functions you're going to want to call don't have simple types, but types with some kind of "effect-carrying" wrapper: `a -> f b`. If we

want to use something like an SEC on these we're going to need to do something about the effect. If we focus for the moment on single target SECs it should be reasonably intuitive that we need this wrapper type to be a functor, so that after running the argument function we can do whatever we need to put the result back in our larger type. This gives types like:

```
first :: Functor f => (a -> f b) -> (a,c) -> f (b,c)
head  :: Functor f => (a -> f a) -> [a]   -> f [a]
age   :: Functor f => (Int -> f Int) -> Person -> f Person
```

which you may recognise as the "van Laarhoven" representation of lenses.

Operators

Operators in optics libraries have a bit of a messy reputation, and I'm not going to evangelise for them here. The way that operators (and similar functions) tend to work is:

1. Construct a small (possibly effectful) edit function e.g. `(+ 2)`

2. Apply the optic to that function to get a larger edit function

3. (Optional) Embed that larger edit function in something e.g. the `State` monad

You can make perfectly good use of optics without a lot of these operators by simply applying the optics as functions to your own small edit functions, although there are some pain points that we will cover (and to some extent solve) later.

Getters and Setters

This is where we rejoin the traditional route to thinking about optics. Setters are pretty obvious, they are simply applying the SEC to an edit function `const x`. Getters are much stranger in this approach. We start from the idea of applying

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- 2025-06-11: Draft

`https://sigilion.net/programming/optics-perspective`

Books

Book Review: Vorkosigan Saga

By Lois McMaster Bujold

> *Forward momentum!*

<div align="right">Lois McMaster Bujold, various</div>

Why You Should Read This Book

These books spent a very long time on my to-be-read list, under the vague impression that they were another interchangeable space adventure/mil-sf/space opera series. And that's not entirely wrong—*The Warrior's Apprentice* is one of the best space adventure yarns out there—but these books are so much more than that. I often think that "something else like the *Vorkosigan Saga*[1]"[2] is one of the hardest book recommendation questions to answer, because the series distinctive in so many different ways. The series is a collage of genres—one book an adventure story, the next a regency romance, the one after that a detective story[3]—tied together by a common thread of characters and ideas. A sci-fi series that thinks about the future while retaining focus on humanity. These books span an incredible range of emotions from page to page while still almost always feeling coherent[4].

Series Overview

This is a type 3 series[5], and while they can theoretically be read in any order I fully endorse the view that you should read the books in internal chronological order, with the exception of deferring *Falling Free* until you've gotten into the series, but still reading it before *Diplomatic Immunity*:

- *Shards of Honor*

- *Barrayar*

- *The Warrior's Apprentice*

- *Falling Free*[6]

- *The Vor Game*

- *Cetaganda*

- *Ethan of Athos*

- *Brothers in Arms*

- *Borders of Infinity*[7]

- *Mirror Dance*

- *Memory*

<div align="center">https://sigilion.net/books/vorkosigan</div>

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[1] https://reactormag.com/something-else-like-lois-mcmaster-bujolds-vorkosigan-saga/

[2] A material chunk, possibly even a majority, of what I've read over the last few years can be traced back to having typed that search into Google and read that post

[3] FWIW I don't think this exact sequence actually occurs

[4] Don't mention the bug butter fight! I mentioned it once but I think I got away with it…

[5] p. 19

[6] I've not actually tried this, but my current thought is that this is the best place to drop in *Falling Free*. Reading in internal chronological order can make *The Warrior's Apprentice* and *The Vor Game* feel like a bit of a duology, and compress the years of Miles's life between those books, which in publishing order have 4 full novels in between them.

[7] The novel-length fixup

- *Komarr*
- *A Civil Campaign*
- "Winterfair Gifts"
- *Diplomatic Immunity*
- *Captain Vorpatril's Alliance*
- "The Flowers of Vashnoi"
- *Cryoburn*
- <u>*Gentleman Jole and the Red Queen*</u>[8]

[8] p. 16

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- 2025-06-02: First published

Book Review: Gentleman Jole and the Red Queen

By Lois McMaster Bujold

> *Everybody has it wrong way round. Parents don't make children — children make parents. They shape our behavior from the first wail. Mold us into what they need. It can be a pretty rough process, too.*

Lois McMaster Bujold, *Gentleman Jole and the Red Queen*

I tend to get the impression that this is one of the less liked novels in the Vorkosigan Saga[1], which has always seemed a shame to me. There just seems to be something so right about ending the saga where it started: Cordelia, on Sergyar, thinking about love and family. I also loved getting a gentle, serious romance to fill in one of the remaining gaps in the genre collage of the series. There were always going to be potential Vorkosigan novels that didn't get written. We're never really going to see Miles-as-dad, Miles-as-grandad, Miles fully accepting his fathers shadow; we're never going to read the Arde Mayhew book. Great as those might have been I wouldn't trade this one for any of them.

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- 2025-06-02: Draft
- 2025-06-25: First published

Book Review: Terra Ignota

By Ada Palmer

> **TL;DR:** This is possibly the most intricately interesting (or interestingly intricate?) sci-fi series I've ever read

> *I think all humans feel rage at our finitude when we see others read what we cannot. In some eras fire was the solution, to burn, like infected sheets, the witches and heretic philosophers who read too well the signs and stars. But wiser eras hold such prophets dear.*

> Ada Palmer, *The Will to Battle*

Why You Should Read This Book

I really don't want to spoil this series for you. And not just for the usual reasons—although they do apply—but because we *all* lose something if the series is spoiled for you. These are such a weird, wonderful, complicated books; they can be read in so many different ways that just reading them can feel like losing forever all of the other ways you could have read them for the first time. If this feels like a histrionic way to start a book review my only defence is that these are the sort of things that reading these books left me thinking about.

If you are going to read this you should be ready to dedicate time to it, it's long and dense, and will suffer more than most books by being read in fits and starts.

My Thoughts

I'd like to ask you once again not to read the spoilers that follow, not just because they will spoil your appreciation of the book, but also because without the shared experience of reading the book I think they might also spoil any lingering belief you had in my sanity.

Is J.E.D.D. Mason Donald Trump?

Yeah, I know, this sounds insane. And I don't think I truly believe this, even in the most metaphorical sense. But think about it: a deluded narcissist surrounded by sycophants who define the terms "good" and "evil", "true" and "false" not by connection to reality or any external moral theory, but by their correspondence to the words of the Dear Leader. I kept finding myself thinking *Sure, Mycroft thinks he's a God, but we know Mycroft isn't a reliable narrator. Isn't this exactly how e.g. Michael Anton's narrative of the Trump Administration would read?* I'd like to do a re-read at some point and really **try** to take Mycroft's side.

`https://sigilion.net/books/terra-ignota`

Madame

I think one of the reasons I found J.E.D.D. Mason so hard to take seriously was the degree to which I hated Madame.

Elon and the Utopians

I struggle to work out how much my feelings about this are negative polarisation.

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- 2025-05-31: Draft

Types of Series

Jo Walton divides[1] series up into 4 types:

1. A single novel that happens to be published in multiple volumes, e.g. *Lord of the Rings*

2. The volumes have individual arcs, but there is also an overarching story which relies on the books being read in order without gaps. This is what I most often think of when I hear the word series.

3. The volumes are largely independant—and can be read out of order—but have common threads, e.g. the *Vorkosigan Saga*[2]. I like the term "saga" to refer to these.

4. The volumes are entirely independant, sharing only setting and theme elements, e.g. Guy Gavriel Kay's historical-ish fiction. I often find this kind of series called "world" or "universe".

It's worth noting that series of a looser type may contain subsets that form a stricter type of series. For example Bujold's type 4 *World of the Five Gods* contains both the *Penric* books, which are a type 2 series, and the *Chalion* books, which are a (small) type 3 saga.

I've found myself using this classification a bunch, and figured it was easier to reproduce the essentials here than to keep linking to a blog post with the idea buried in the middle of it.

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- 2025-06-02: First published