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# On viewing and presentation methods

MARCH 14, 2018 BY [MING THEIN](#)


*Phantom lamp, Chicago*

A little while ago, a reader sent me an email with a question (and great idea for a post): what's the best method image viewing and presentation, especially when considering different audiences? It's not an easy one to answer, and honestly, perhaps something that's given very little to no consideration by most photographers. This is obviously problematic because it's the final, critical link in the creative chain: if the audience isn't seeing what you captured, much less what you intend – why are you bothering to show it at all? I would personally rather not show an image than show one that conveys the wrong overall impression. Perhaps the differentiation isn't quite so clear cut, but I think you get my drift.

The ideal presentation method is a balance between a few things: the image itself, and whether it requires a particularly large size or high information density to work; the environment under which the images will be viewed, and lastly – the attention span of the audience. Firstly, if the image doesn't work at smaller sizes or information densities – the one from my *Forest* series shown above is a very good example of this – then there's probably no point in showing it if the full intent cannot be conveyed. I simply cannot give you the impression of standing in front of a forest if you're looking at it with web compression and 3" wide on a mobile phone screen – it's just impossible. The viewing psychology is all wrong, for starters: there is too big a gap in expectations between the audience's memory of the subject matter and the presentation medium. But at the same time, the

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first image is graphically strong enough that it works at small sizes, but gets better and ‘gains room to breathe’ at larger sizes. You go from seeing the block forms to feeling the microtextures in the wall come alive.

Next, we must consider the ambient situation: any digital viewing device is going to struggle under strong light, with both color gamut, brightness and dynamic range. Images will appear flat and washed out; though the brightest screens might be able to overcome this, you’re still going to be fighting an uphill battle most of the time. And if you’re also compromised on size – e.g. with a phone – then I think you might as well not bother. In general, reflective media – i.e. prints – do well better in sunlight than transmissive media (screens) – though backlit prints would probably be the best of both worlds as their brightness would vary with the ambient light source. The only thing to be aware of is that ambient light will affect the perceived color balance of the image; you want to avoid very warm/cool sources. However, the tables turn under darker situations: screens will give you more pop and contrast, and prints will start to look muddy – especially if the image is low in contrast to begin with. The biggest caveat here, in my opinion, is that the best screens still top out at 5K (soon to be 8K, I guess) – which is not bad, and can show a whole M4/3 or APSC file, but not even 1/6th of my 100MP Hasselblad.



*Forest VII: 600MP image, intended viewing as 6x7ft transparency on lightbox, suspended from ceiling. I don't even show these images online anymore, other than as examples for articles like this. They don't even have look 'right' to me on the 5K 27" screen, especially having seen the full size installation.*

Of the three, I think the final point is going to be the killer: the attention span of the audience. It will be your biggest restriction; with the right group, they'll travel to a show to see large format prints, but if they don't care, you'll be lucky to get half a second of attention on their social media feeds. Easier and faster remains the highest chance of having an image viewed, but also the worst method because it's too easy: the expectation is one of disposable pictures, much like fast food. There is unfortunately not a lot you can do about this, unless you are one of those people blessed with magical powers of persuasion.

I think hands down, the worst possible viewing medium is the mobile phone: not only are the screens tiny, and the total information conveyed relatively low, color gamut can be all over the place, and it's not helped at all by way such images are distributed: compressed jpegs that are probably further compressed by the message transmission service or social media provider. Avoid this for anything serious; to the point of perhaps limiting what's even available to view on this format. Unfortunately, we tend to fall into the habit of carrying our portfolios on our phones (I'm guilty of this, too) – just remember that you're not giving the best first impression by any stretch.

The next level up would be something on a tablet, preferably with a high density and decent-color accuracy (since none of them can be calibrated) screen, and transferred to the tablet as a whole file from the computer and created on a calibrated device – this minimises potential information losses, and some tablet screens are actually quite impressive – like the 2.7k screen on the 12" iPad Pro. It's of a decent size and gamut, good brightness, and still relatively portable; this would be my choice for portable

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standalone viewing – if I didn't already have a 13" laptop with an equally good display. I put the laptops in a slightly higher category for two reasons: the screens tend to go a bit larger, and in addition, you've got more control over the color space and calibration, so you know what's displayed is going to be faithful. The UIs tend to be a bit less intuitive and simplistic compared to tablets, but they'll still work in a pinch.

One level up are the desktop monitors: avoid the cheap stuff because it will look terrible; not just resolution, but more importantly color reproduction and viewing angles. A good desktop monitor like the iMac 5K makes for a really excellent viewing experience; it's like a 27" backlit print, though the information density isn't quite as high (218PPI, vs up to 720PPI for the current generation of [Ultraprints](#) – read [this article](#) for why printing matters at all, and [this discussion](#) for the rationale behind Ultraprinting.).

I still think that sitting at the very top of the tree is a really good, large print – one that is both matched to the subject matter and the size it needs for the audience to fully be immersed, and something the camera's capture resolution can handle. There is no replacement for being able to view *all* of the captured information simultaneously, especially when 'all' is significantly more than digital viewing can reproduce, and that extra information potential has been considered during capture and subsequently makes a difference in the overall impression of the image. It isn't practical, of course – but one should at least try to save your very best images from the fate of only ever being seen on Instagram. To answer the original question in a roundabout way: at least use a decent size and spec tablet indoors. But I'll also add something that hasn't been discussed, because it's a stylistic choice as much as anything: ideally, the artist should be the one setting the pace and sequence for the presentation: this way, you can draw attention to specific elements in an image to encourage more contemplative viewing, and add that layer of context that might otherwise have been missed. If anything, a good plot line can make up significantly for a lousy television...  
MT

**Over to the audience: How do you typically view images? Is there a big disconnect between capture and output resolution? Do you feel like something gets lost in the displaying?**

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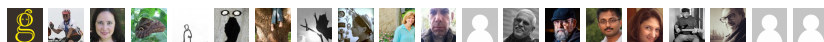
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## Comments

Tina says:

[April 15, 2018 at 4:14 PM](#)

Thank you very much for this article.

A few good points well made. For me the most important one was the reminder how great 'being able to view all of the captured information simultaneously' is.

Do you have an article on backlit prints?

**Ming Thein** says:

April 15, 2018 at 4:15 PM

Thanks. Sorry, no – haven't written anything explicitly about backlit prints...

**JJ** says:

March 17, 2018 at 11:54 AM

I have no particular desire to print large for display, I don't have the wall space to display more than a few prints and I find (hope!) that my skills are improving so I wouldn't necessarily want 2017 photos on my wall 5 years later.. but I would like to print personal albums for family (as always, still on the to do list). As these prints are unlikely to go above A4 size (and probably printed by high street or online printers who introduce their own quality limitations), the lack of need for super high resolution is one thing that has enabled me to resist "upgrading" from M4/3 cameras. I think you and others have shown that as soon as you start wanting prints measured in metres, you start craving higher resolutions.....

So for my personal viewing I view on the computer screen (only 1920 x 1080, but a fairly high end colour calibrated model). If I personally show them to others it's on that screen, on a laptop, or on a samsung tablet – bright and contrasty, but no promises about colour accuracy. If I post them online – I guess a large percentage are seen on mobile, looking at the flickr stats, generally about 30-50% of views are listed as "mobile".

Actually flickr is interesting from an analytics perspective because I can see most viewers fall into a few buckets – those who search for photos taken with a certain camera and find the ones I posted in a group for that camera (the GM5 group always generates a lot of views); those who search for a place name and find my photos algorithmically ranked high in the results (I don't understand the algorithm, but I can't imagine the results are very useful – my most popular pictures are of a door in Penang and a wall in Macao- both come up high in searches for the respective places, but are hardly typical (or interesting) photos for anyone searching for that place); and finally members of your reader group :-). And the last group, going by the patterns of "likes", are the ones who spend time looking at the photos, I guess the majority of people who see my photos don't really care much and glance at them on a mobile or scan past them quickly on a computer screen.....

(I'd be interested in how your flickr stats break down – do you actually think the platform is useful for generating an audience or do you just host images there for the sake of the blog?)

**Ming Thein** says:

March 17, 2018 at 12:00 PM

I've given up attempting to analyse social media algorithms – there's no point because they change with the winds and any attempt at the owners to extract another buck of revenue out of the users. Instagram is a good example of this – my reach stats vary wildly for no apparent reason, even for the same image posted months apart (I tried; the second time got 5x the views/likes of the first time). Off ~7,800 followers I have anywhere between 50 and 500 likes on a given image – there is no commonality here between what works and what does not. Flickr, I think has stayed simpler, but no – it doesn't generate a serious audience and the back-traffic to the site is almost nil. I just use it as a low cost hosting service and have done so for some time now.

**Toerag** says:

March 16, 2018 at 7:41 PM

Perhaps another question to ask is what is more important – bit depth, colourspace or resolution when you know your output medium can't handle 'full resolution' – would we be better off shooting at 8MP but with better DR, tone and colour control than 24Mb with worse DR, tone and colour control if we know our images are going to be displayed on mobile phones or tablets?

**John Wilson** says:

March 16, 2018 at 7:53 AM

One method of displaying images you have perhaps omitted is the book (disclaimer: I work in a bookshop) which, from a good publisher, would fall between a desktop and a mounted print in your spectrum. Books also offer the chance to display a sequential series of images in a format which the artist has some degree of control over. They also require more commitment from the viewer than web display (since they have bought the book – or at least come to the bookshop to look at it!) but less than the high degree of commitment needed to purchase a print. Of course, the quality of published books varies according to publisher and price, but the value of a good photography book to promote the photographer's images should not be discounted just yet.

**Ming Thein** says:

March 16, 2018 at 7:56 AM

Agreed, and this was a deliberate choice to some degree. Whilst I'd consider books a subset of a print, you're right that there's enough difference to think of them separately because you have a lot more control over the order in which images are viewed – a series of prints on a wall can be taken in at once, but images in a book cannot. You're also size-limited. However: there are plenty of self-publishing options out there, but most photographers lack the discipline and experience necessary to properly curate and sequence images in a way that maximises impact; because of this I'd consider the barriers of entry to producing a *good* book to be much higher than a good print or digital display, and that's before we even start debating digital offset vs gravure... 😊

**John Wilson says:**

March 16, 2018 at 8:19 AM

Does the quality of good self-publishing make the final price too prohibitive, or does the compromise of working with a commercial publisher reduce the quality of the final book to an unacceptable level? In other words, do you think that commercial photo books offer anything worthwhile? One benefit perhaps is that a good bookshelf invites the owner to review images in a book, and acquaint herself with an artist's work, whereas a print is either on a wall (where it might become obscured through over familiarity) or kept safely in the dark (where it is not seen).

**Ming Thein says:**

March 16, 2018 at 8:34 AM

Neither – there are some really exceptional commercial books, in all of content, curation and print quality; even at relatively affordable prices (say \$50-100). Self-print at that print quality (using gravure) is just out of reach impractical – you need to do a minimum of 1000+ copies for the tooling costs of the rollers to make sense. Even with digital offset, a crappy book is \$100+...

**John Wilson says:**

March 16, 2018 at 8:38 AM

Very interesting! Should Taschen ever produce 'Thein: The Complete Works' (as they should), there will be space on my shelf for it 😊

**Ming Thein says:**

March 16, 2018 at 8:41 AM

Sadly I don't think so 😞

Plus if they printed every article here...it would run to something like 2,500 pages...!

**Darrell Broadwell says:**

March 17, 2018 at 9:23 PM

I think a book of your work would be very desirable

**Ming Thein says:**

March 18, 2018 at 9:29 AM

I desire one too, but after many previous investigations, it simply isn't economically feasible...

**Mark says:**

March 15, 2018 at 11:37 PM

Hi Ming,

I believe there is also a question of perceived value. If someone has taken the time and effort to print/frame a picture then a viewer may place a higher value on the picture than one viewed on a screen.

**Ming Thein says:**

March 16, 2018 at 7:28 AM

Agreed: and if you are forced to curate on the basis of having to print and exhibit, then the threshold is usually much higher...

**Richard Karash says:**

March 15, 2018 at 4:09 AM

First, I think today's screens display an image with the punch we used to enjoy from chromes. I agree with your comments: 5K beats laptop/tablet beats phone. I would love to have a wall mounted 4k screen for continuous image display. Trouble with screens is the environment (usually none) around the screen. Fine art deserves to be displayed on the wall in proper context.

I am getting very pleasing 20"x30" (close to A1) from 24MPx digital bodies. Printed on paper or metal (I like the white coated metal base from AdoramaPix), these display very well. I've made some 40" on canvas. When well framed (or perhaps frameless), I think

these make very satisfying items for our walls.

I don't know what to think about displaying images on the web. Thanks for this article.

**Ming Thein says:**

March 15, 2018 at 7:27 AM

Web: good question. Most of the time these images are viewed \*tiny\* on mobile devices (at least that's what the stats tell me). This rather defeats the point – it's like reading the blurb on a book and coming to a conclusion about the author without ever having read a proper paragraph. So much information is lost that a lot of good stuff doesn't really get the impact or viewing time it deserves, and a lot of mediocre stuff has sins hidden. There's no point in uploading large images because of loading times and display media, not to mention copyright issues. What I've used for web has slowly gotten larger over the years as internet speeds and screen sizes have increased, but 2MP is still a far cry from all the information in even a cameraphone image. And that's before we even think about SRGB limits etc...

**Anatoly Loshmanov says:**

March 14, 2018 at 9:41 PM

Hello Ming !  
Thanks for very interesting post.  
Sincerely,  
Anatoly

**Harry says:**

March 14, 2018 at 9:30 PM

Considering the original blog and responses, several things are becoming obvious to me that I'd never appreciated enough. The display, of whatever type, (first major decision), has to be the right size for the subject, not conflict with it's surroundings, and also, grouped properly. It seems that displaying a picture is as much of an artistic process as it was taking it originally.

**Ming Thein says:**

March 15, 2018 at 7:21 AM

In some ways, more so – I can think of a lot of examples of curations in the past where a single image doesn't really work on its own, but given the context of the others it's displayed with – becomes not just stronger but also necessary for thematic or conceptual continuity. Similarly, there are cases where a single large image would have more impact than a whole array of small ones. And that's before we even think about medium, lighting, surroundings etc...

**aaron c greenman says:**

March 14, 2018 at 7:54 PM

As pretty much a black and white only photographer (and someone who has vision issues with looking at large screens), I'm pretty much about the print, typically printing a small selection of my images on A3 Canson Baryta Prestige with my Epson 3880 converted-to-Piezography Pro (nine ink B&W only) setup.

**Rudolf O. Friederich says:**

March 14, 2018 at 5:31 PM

Thank you for bringing this subject up for discussion.  
I print a few of my (and my wife's) best pictures to the size of A3+, but wall space is finite. Certainly, a print is the most satisfying way of enjoying a good photograph.  
For viewing with family and friends I use my TV, a Metz Novum 55". The OLED screen gives a decent color rendition and with 4 k a good resolution at viewing distance.  
The beamers I have seen up to now have been disappointing, with perhaps the exception of some very expensive models.  
Furthermore, I hate the hassle with setting up beamer and screen every time I want to show pictures to a small audience.  
It would be quite interesting to hear other reader's opinion and experience.

**Ming Thein says:**

March 14, 2018 at 7:32 PM

Projectors are a bit of a pain, I agree: but they have one advantage (assuming a purely optical system) – there's no pixelation and all scaling is linear. That said, you need to have the transparencies to begin with...

OLEDs trade gamut and color accuracy for dynamic range (they can reproduce true black, which LCDs cannot). As with all technology, I'm sure everything will improve in due course...

**Knut says:**

March 14, 2018 at 5:05 PM

Concerning images on social media: I often want to zoom in on images with a pinch but bump into two limitations. 1) the resolution behind an image often does not allow zooming. 2) bandwidth problems often limit a smooth zooming experience. The problem appears to be that zooming usually loads the whole picture in high resolution, despite the area of interest (as zoomed) being quite small. I imagine intelligent technology could solve this problem. The presentation of some gigabit images shows the way: here only the area of interest is transmitted in greater resolution.

Actually selective transmission of a regional area in higher resolution could solve a second problem. Often photographers are concerned about making a high resolution image available, they fear it might be downloaded and used for other purposes without permission. Intelligent zooming with selective data transmission could make sure that the viewer never receives a full image (e.g. technology could make sure that there would always be some gap somewhere). This way a photographer could allow high resolution viewing of an imaging without worrying about copyright infringements. Expanding the viewing experience in this way could improve the presentation of images in a time of small viewing devices like smartphones.

**Knut says:**

March 14, 2018 at 2:40 PM

This article goes to the center of many problems I ponder, thank you Ming! The forest picture and how to present it: this lucently describes a problem I have not been able to address as clearly with words but which I have been moving around a long time. I'm looking forward to the discussions.

**Ming Thein says:**

March 14, 2018 at 7:30 PM

Thanks. I suspect it's a non-issue to most people though since few print, few can actually deploy all of the resolution of their cameras, and few read anything here but the reviews 😊

That said: a print – for now – beats a screen. But at sufficient density and color gamut/ accuracy, I'll take the screen – a transmissive medium has a lot more dynamic range than a reflective one, no distracting reflections and the ability to simply be more immersive. Perhaps the best of both worlds is a backlit print (or contact print, or transparency).

**bartjeej says:**

March 14, 2018 at 2:31 PM

I'm a bit confused about this part: 'The biggest caveat here, in my opinion, is that the best screens still top out at 5K (soon to be 8K, I guess) – which is not bad, and can show a whole M4/3 or APSC file, but not even 1/6th of my 100MP Hasselblad.'

M4/3 is 20mp nowadays, and APSC 24 (28 when Samsung was still around). Those are 1/5 and 1/4.1 of 100mp. Is the 1/6 due to aspect ratios?

As for image display: I view other people's images on my phone (shame on me) or on my 12" laptop. I print a few of my best images for home display (my goal is to eventually have a collection that I can rotate). I have them printed on metal or as photo prints behind acrylic glass; the biggest so far has been 32 inches / 80cm wide. Seeing that it comes from an upsampled 12mp Fuji X100 file, I'm amazed at the amount of detail it still provides up close. These large prints bring the photos to life like nothing else.

One doubt I have is about print medium in relation to the space it's displayed in. As I'm about to move to a very old home, I'm afraid the metal prints especially might look out of place (but they add a level of drama to the print that a photo print behind acrylic can't quite match). I'm considering trying a print on Hahnemühle paper without acrylic or anything modern, just mounted in a frame.

**Ming Thein says:**

March 14, 2018 at 7:29 PM

There's aspect ratios, there's 8K screens, and not all M4/3 cameras are 20MP – I'm averaging. As for printing – not all subject matter shows the benefits from more resolution (and I'd even argue that some, like shallow DOF portraits, are probably better with lower resolution for subject-flattery). But in a lot of cases, more \*is\* better \*if\* you can see and deploy it – a landscape is a good example. Windows and camera phone shots on Instagram look very different...