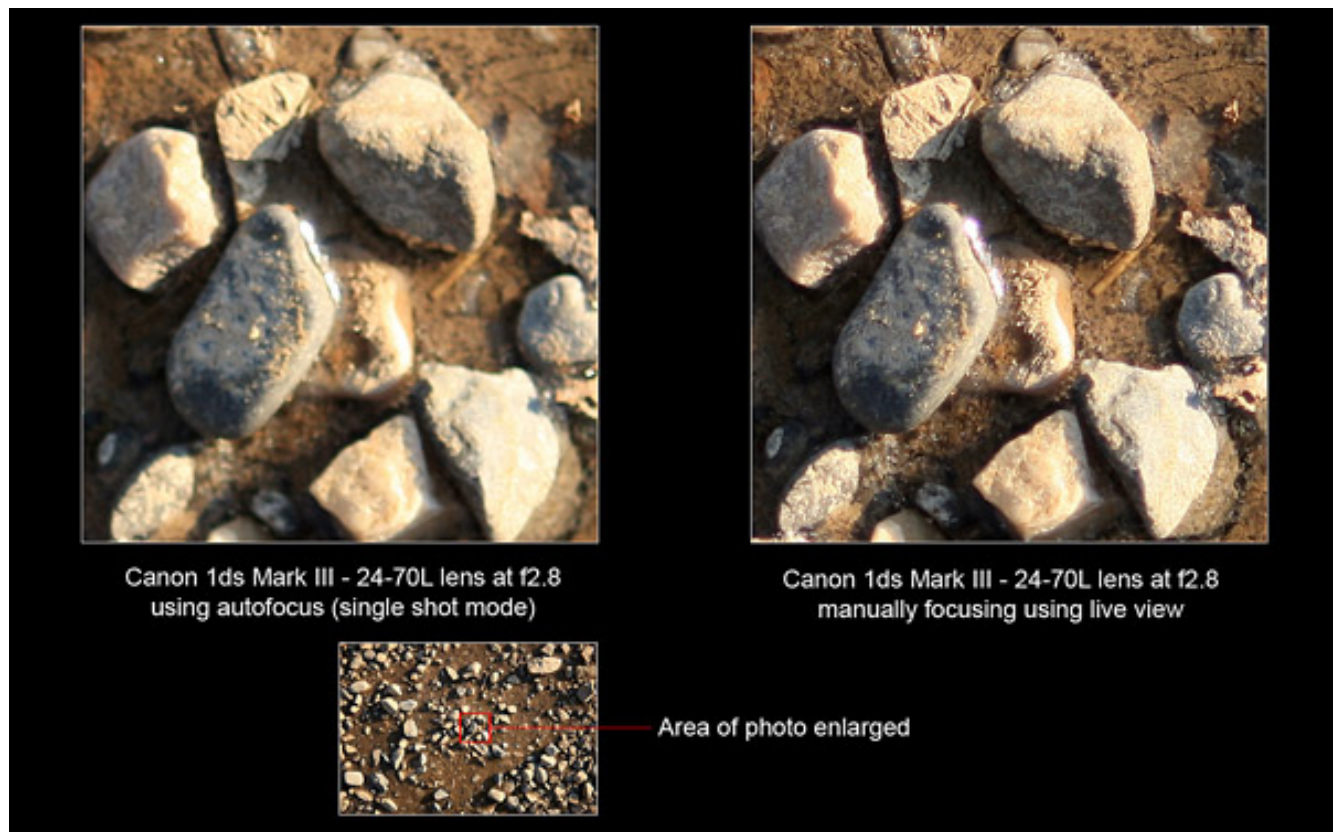


Can You Trust Autofocus with Your Digital Camera?

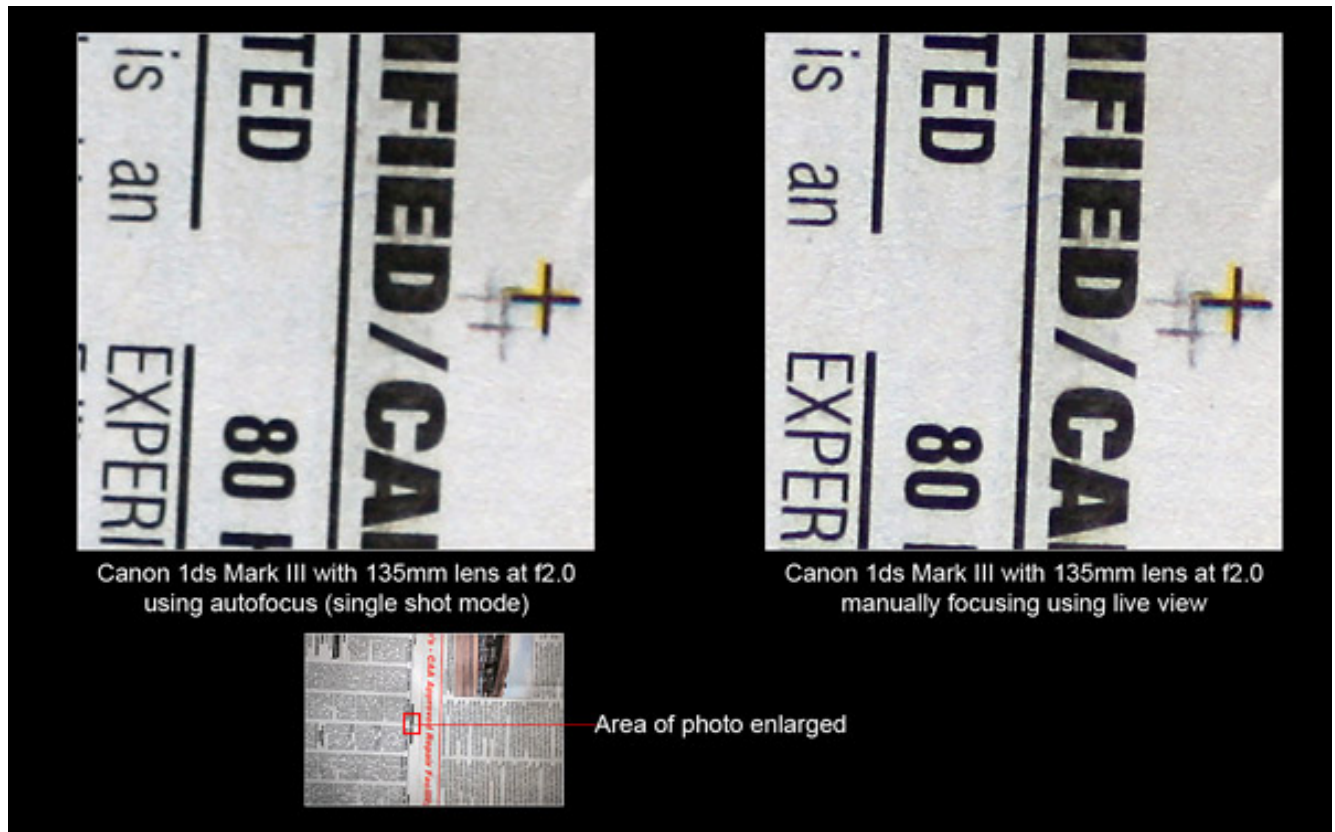
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I was testing the sharpness of a couple of Canon lenses the other day when I discovered something that blew me away. I got much sharper photos by manually focusing my lenses than if I used autofocus! Right away I thought something must be wrong - the camera must be at fault (maybe that rear focus problem that has haunted some Canon cameras) or maybe the lens was faulty or something like that. How could manual focus give me significantly sharper results than autofocus? Well after testing all my lenses on two camera bodies (a Canon 1ds Mark II and a Canon 1ds Mark III) and then testing my girlfriend's Nikon D200 with several of her lenses, the conclusion remained the same: Careful manual focus always gave me better results than autofocus did!

I first noticed the difference when using my Mark III while testing my 24-70mm f2.8L lens. I used autofocus at f2.8 to make an image of rock details on the beach and then repeated the same picture, but this time I used manual focus and the 10X magnification feature in "live view". With live view, you can see precisely what the sensor sees on the LCD and magnify the view 10 times for critical focus. The differences were huge!

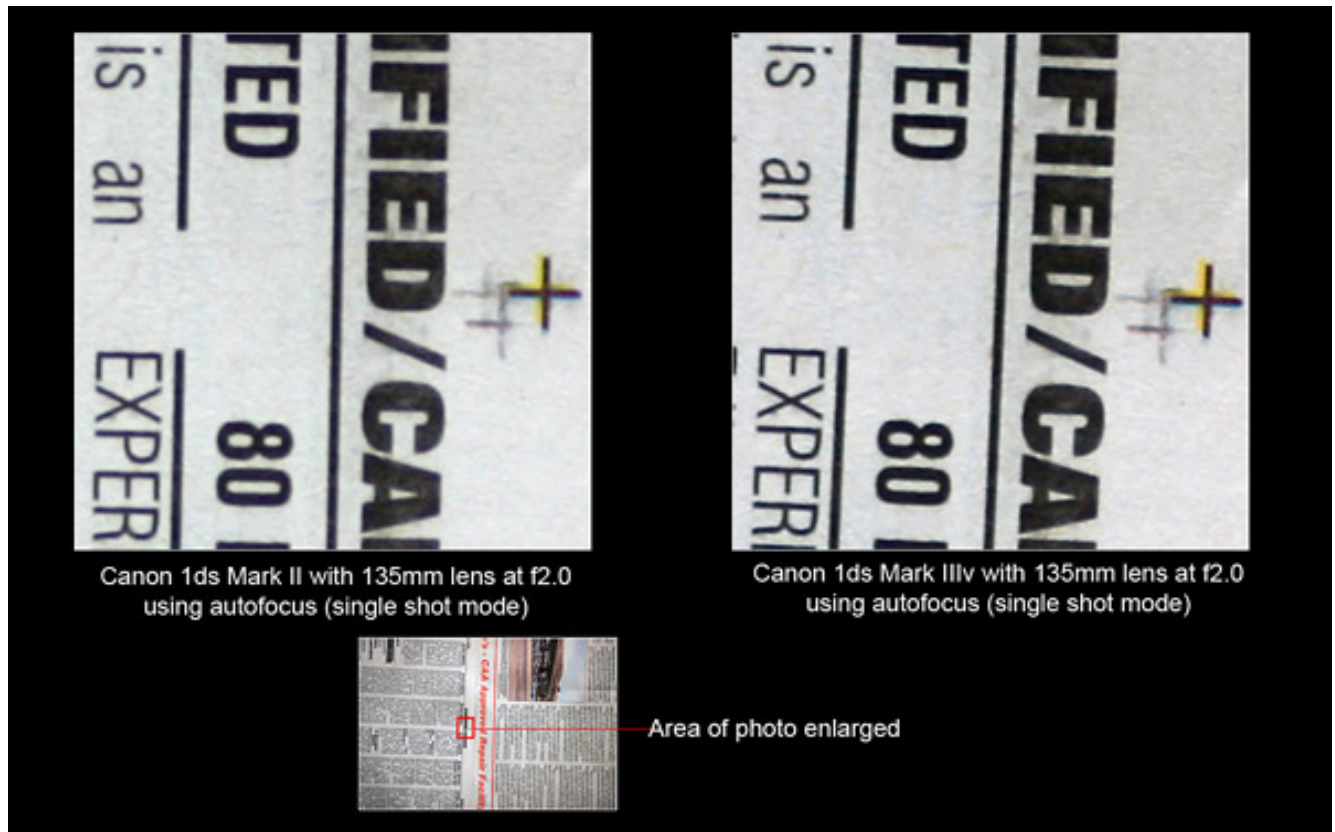


I tried autofocus at various apertures but the results were always the same - live view, manual focus gave the sharpest results in spite of gains in depth-of-field with smaller apertures. When I tried the same test with my 135mm f2.0L lens on the Mark III and live view, manual focus won again.



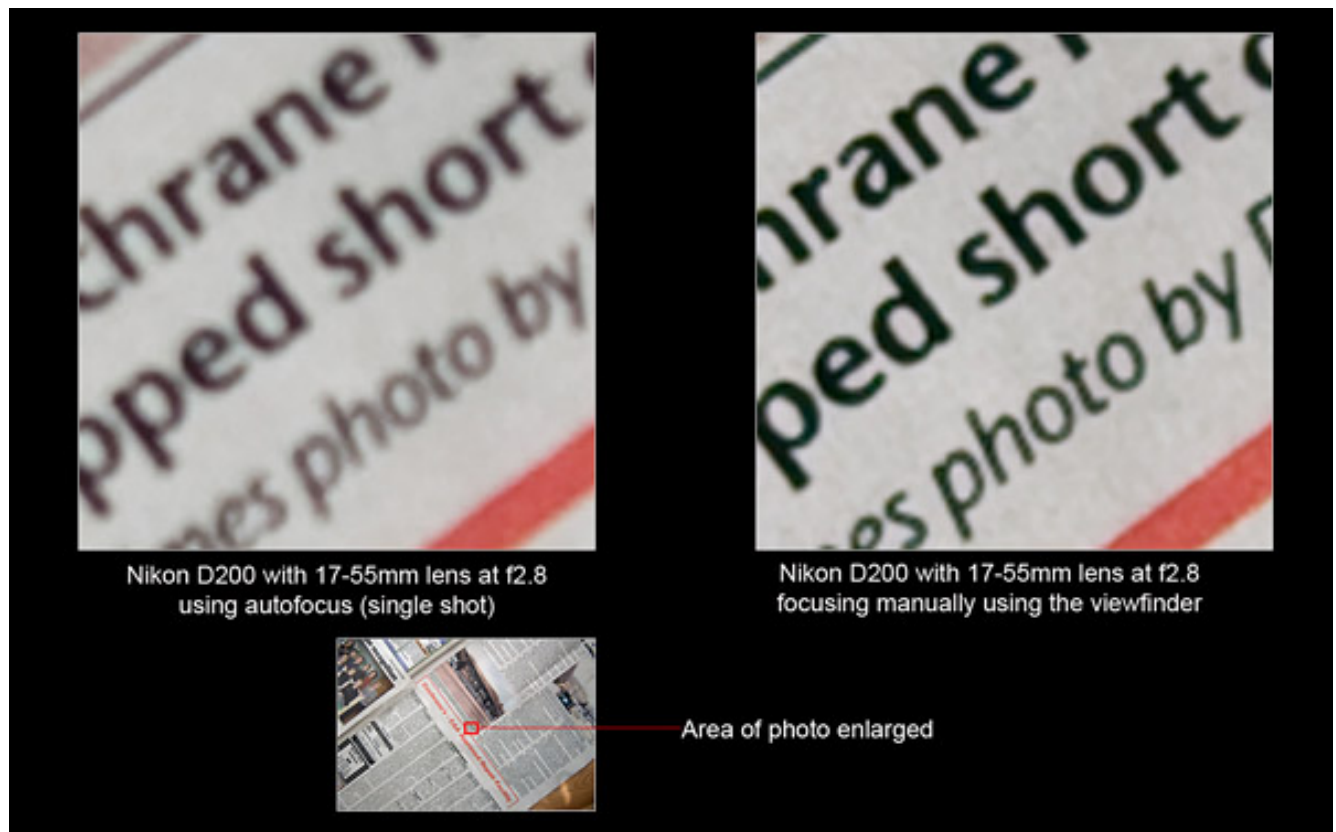
I tried every lens I owned, but got the same results. It wasn't a problem with the lenses.

To be sure the problem was not with my Mark III (Canon has had autofocus issues with the Mark III series), I used the same lenses on my Mark II and got the same results with autofocus as I did with the Mark III.



In fact, every lens I used on either camera gave me the same results. There were no differences in focus quality when using autofocus on either camera.

Live view is a tremendous asset for critical focus, so maybe comparing autofocus performance with the minute and critical manual focus advantage offered using live view was not really fair. I decided to use my girlfriend's Nikon D200 to see if plain old manual focus using the viewfinder was as good as using autofocus (the D200 does not offer live view). Plus, I wanted to make sure that poor autofocus performance was not just a Canon problem! Using the Nikon D200, I was completely surprised by the results. I could always focus the image sharper just using the viewfinder and manual focus than the camera could by using autofocus.



Autofocus with the Nikon was just as "imprecise" as it was using the Canon. Autofocus is pretty good with all of the cameras and lenses I tested but not as good as the human eye. In the field I now often let autofocus do its "best" and then I check the results using live view. I almost always need to re-adjust the focus slightly to get the optimal results. Simply put, I no longer trust autofocus when I am shooting landscapes.

What's the moral of this story? Test your camera and lenses to see if your eyes are better than the camera's autofocus capabilities. In all of my tests, I used flat surfaces with good contrasty subjects and leveled the camera for perfect flatness. I also used wide apertures (e.g. f2.8 or f4) so depth-of-field did not mask errors in focusing. I used a cable release and mirror lock-up on a sturdy tripod to insure there was no camera movement. In the real world, using autofocus and a smaller aperture (f8 and beyond) will often "correct" for slight focus errors. But if you have decent eyes and want the absolute best performance from your lenses, use manual focus - especially if your camera has live view.

For years I have owned autofocus lenses but always used them manually for landscape photography so I could pick my focus point for optimal depth-of-field and also not waste battery power. Over the last several years, I have used Canon's tilt and shift lenses for my landscape work. These lenses can only be focused manually. Now that I have discovered just how much sharper manual focus can be, I am glad I have had autofocus turned off for so many years! Check for yourself to see if manual focus works better for you in nature photography.

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