Where Is My Mirror? (Supplementary Material)

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1. Overview

In this supplemental, we first show more examples of how MirrorNet can help improve depth prediction and semantic segmentation on images from the NYU-v2 dataset [5] in Section 2. We then present more image/mask pairs from our proposed MSD dataset in Section 3. Finally, we provide more comparisons to the state-of-the-arts on the proposed MSD test set in Section 4, and on some challenging images obtained from the Internet in Section 5.

2. Results on the NYU-v2 Dataset [5]

(a) image   (b) depth   (c) segmentation   (d) MirrorNet   (e) our depth   (f) our segmentation
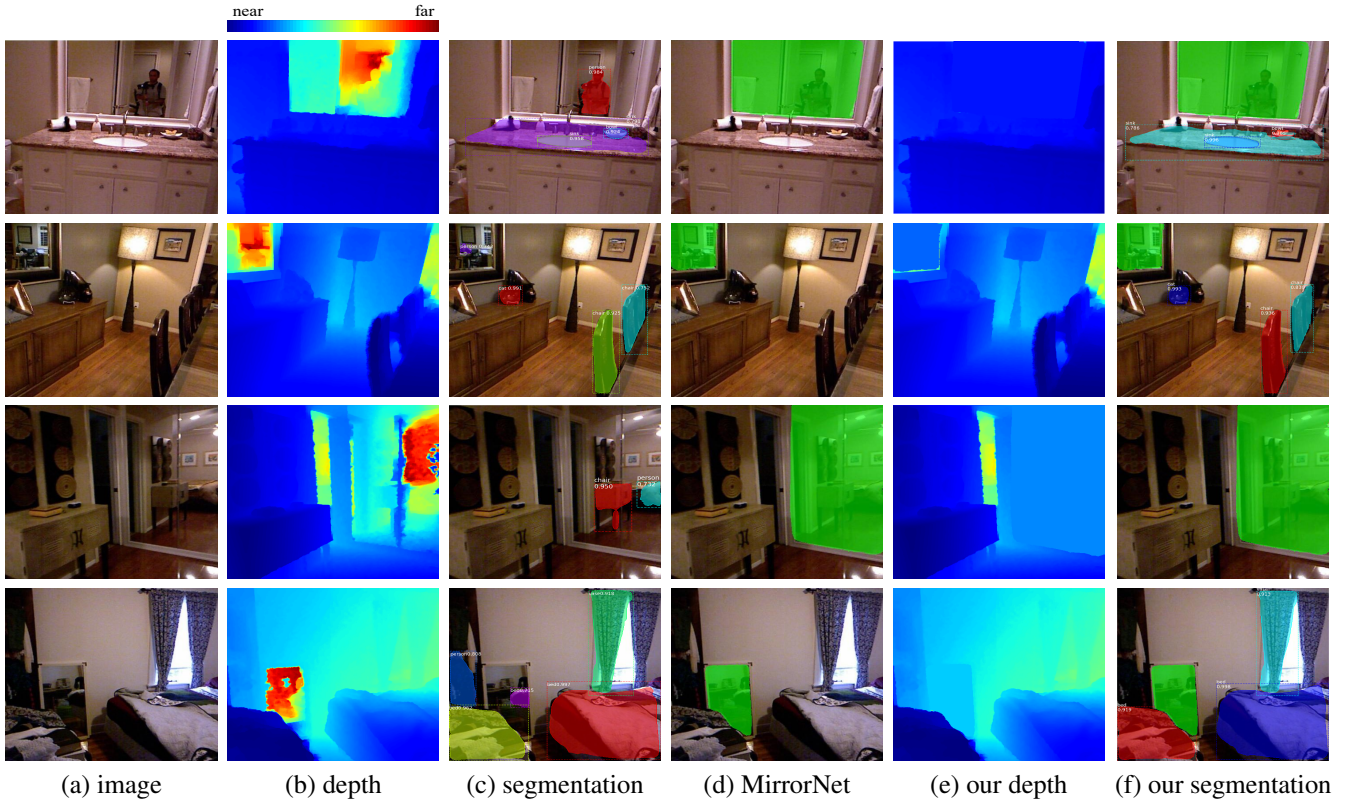
Figure 1. Problems with mirrors on existing computer vision tasks. In depth prediction, NYU-v2 dataset [5] uses Kinect to capture depth as ground truth. It fails to predict the depths of the mirrors for the mirror regions. Instead, it predicts the depths of the reflected contents for the regions (b). In instance semantic segmentation, Mask RCNN [2] wrongly detects the objects inside the mirrors (c). With our MirrorNet, we may first detect and mask out the mirrors (d). We can then obtain correct depths (e), by interpolating the depths from the surrounding pixels of the mirrors, and segmentation maps (f).

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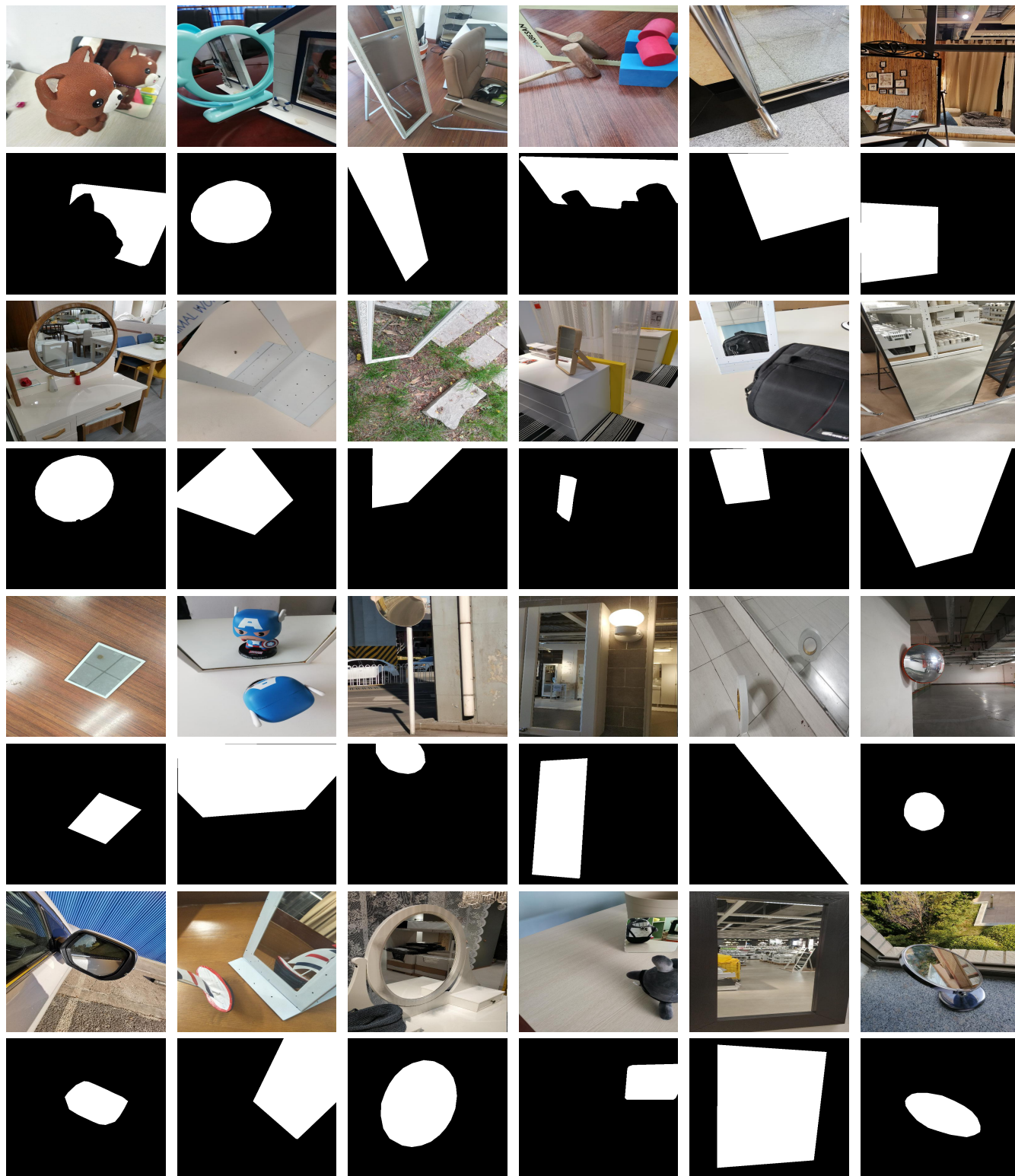
3. Examples of the Proposed MSD Dataset

Figure 2. More example mirror image/mask pairs in our mirror segmentation dataset (MSD). It shows that our MSD covers a variety of our daily life scenes that contain mirrors.
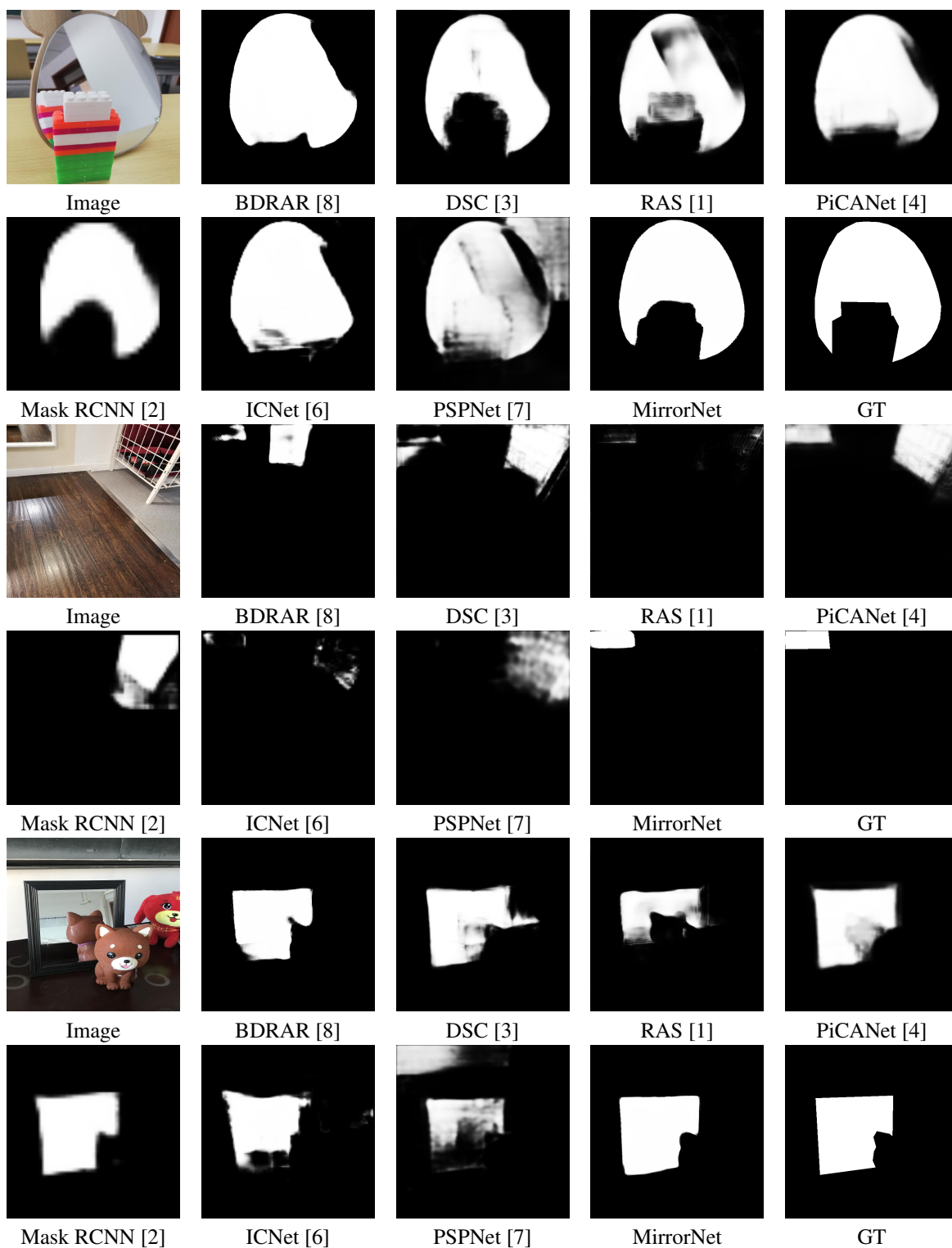
4. Comparison on the MSD Test Set

Image	BDRAR [8]	DSC [3]	RAS [1]	PiCANet [4]
Mask RCNN [2]	ICNet [6]	PSPNet [7]	MirrorNet	GT
Image	BDRAR [8]	DSC [3]	RAS [1]	PiCANet [4]
Mask RCNN [2]	ICNet [6]	PSPNet [7]	MirrorNet	GT
Image	BDRAR [8]	DSC [3]	RAS [1]	PiCANet [4]
Mask RCNN [2]	ICNet [6]	PSPNet [7]	MirrorNet	GT

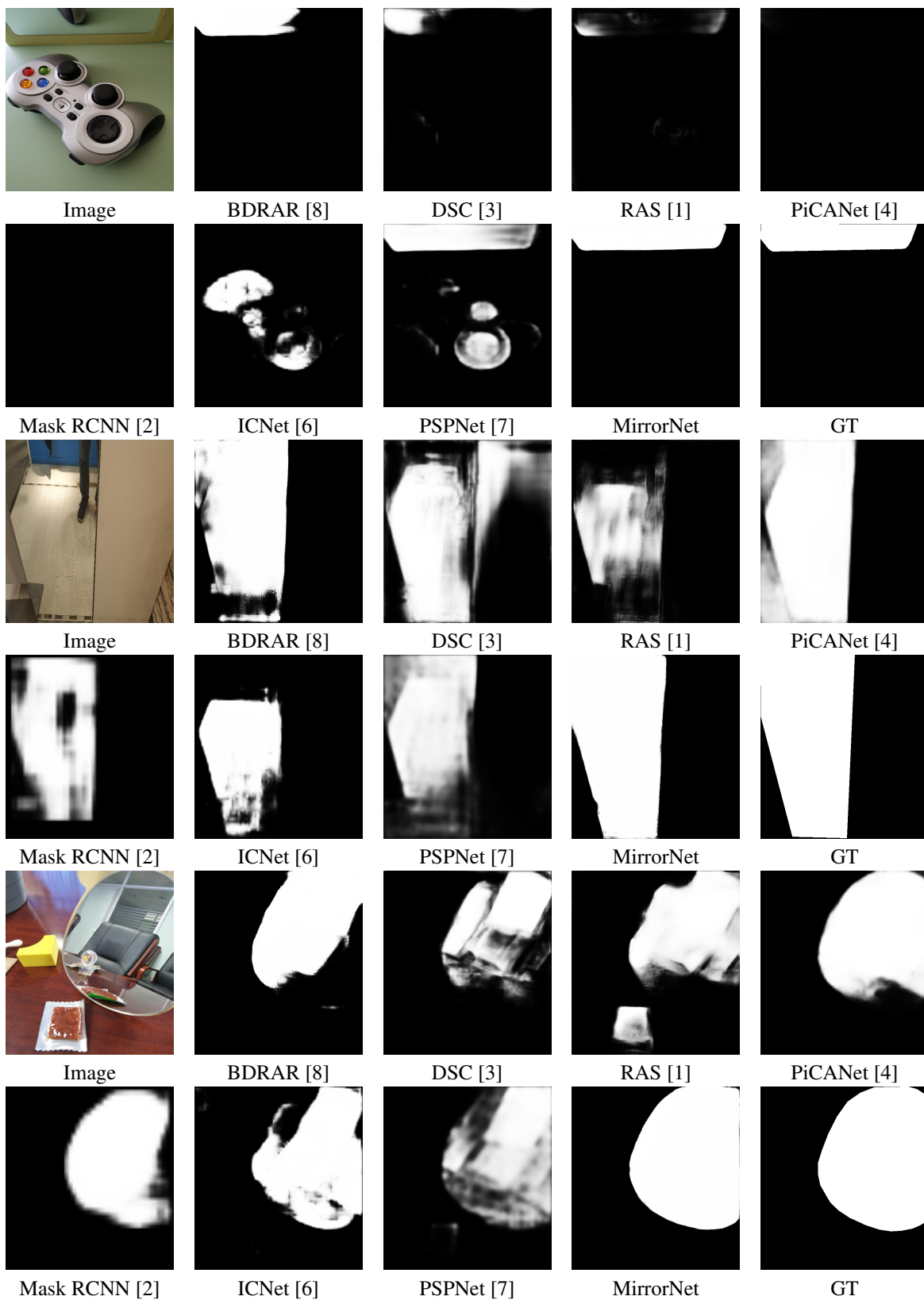Figure 3. More visual comparison of MirrorNet to the state-of-the-art methods on the proposed MSD test set.

| Image | BDRAR [8] | DSC [3] | RAS [1] | PiCANet [4] |
| Mask RCNN [2] | ICNet [6] | PSPNet [7] | MirrorNet | GT |

Figure 4. More visual comparison of MirrorNet to the state-of-the-art methods on the proposed MSD test set.

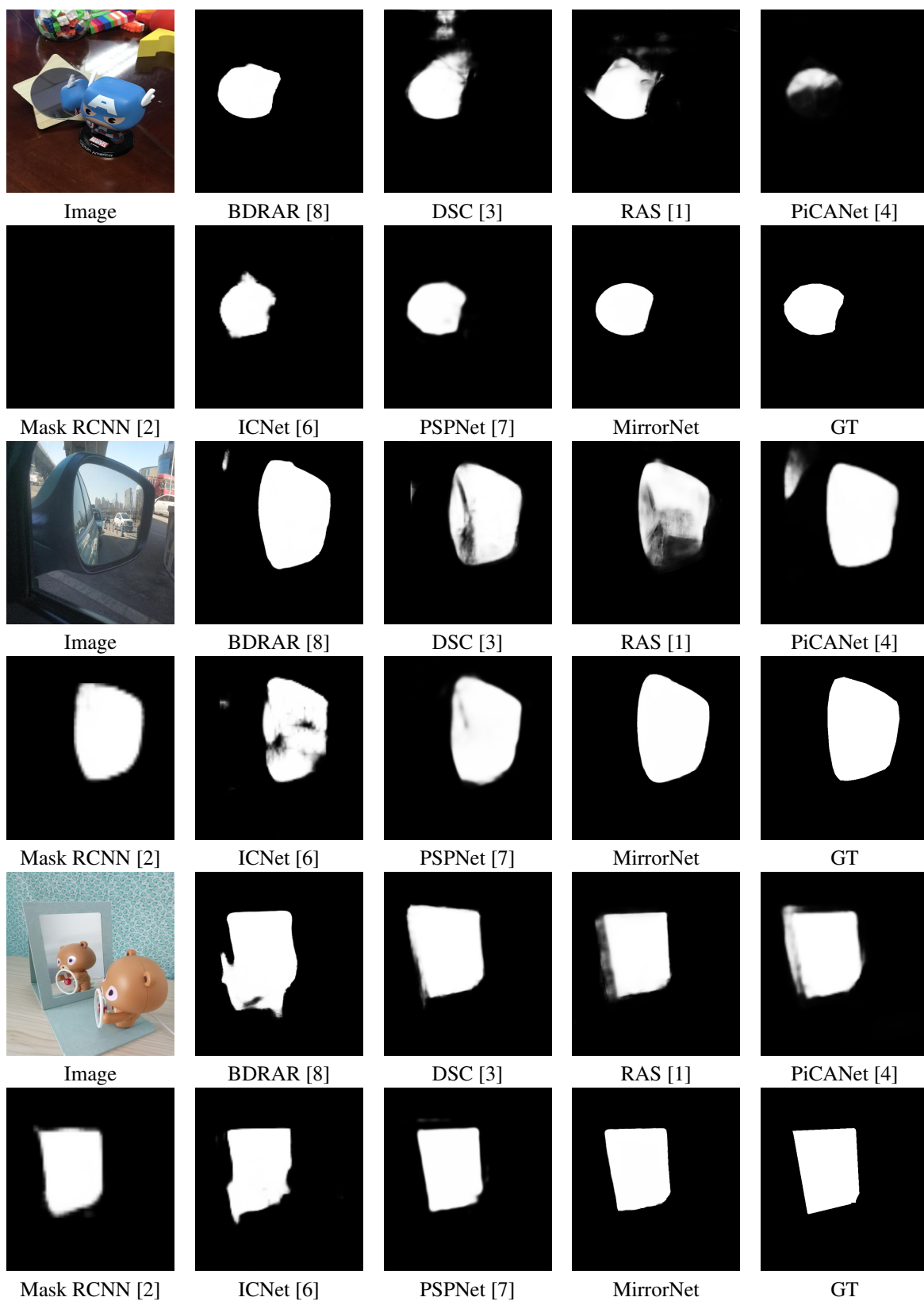| Image | BDRAR [8] | DSC [3] | RAS [1] | PiCANet [4] |
| Mask RCNN [2] | ICNet [6] | PSPNet [7] | MirrorNet | GT |

Figure 5. More visual comparison of MirrorNet to the state-of-the-art methods on the proposed MSD test set.

Figure 6. More visual comparison of MirrorNet to the state-of-the-art methods on the proposed MSD test set.
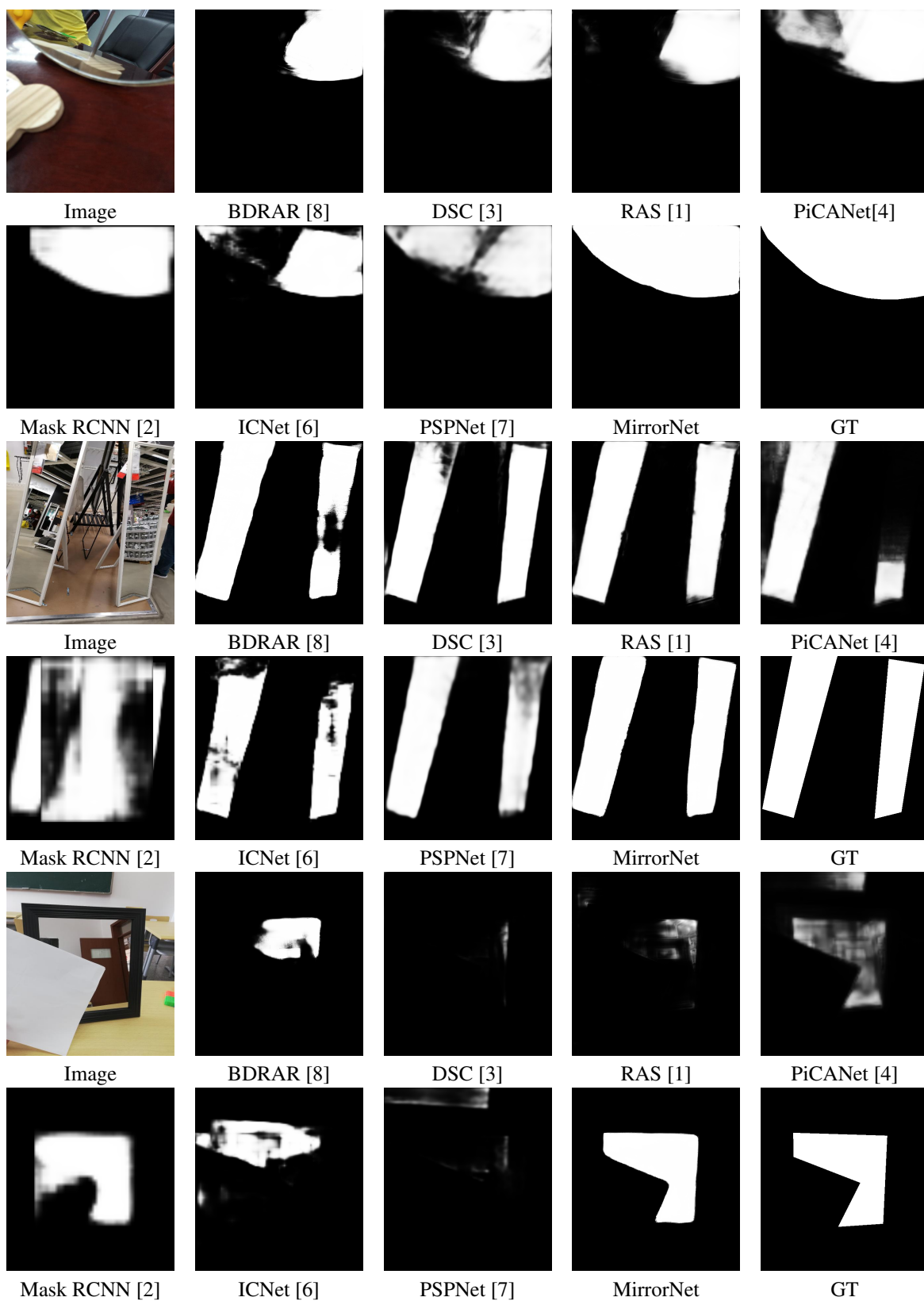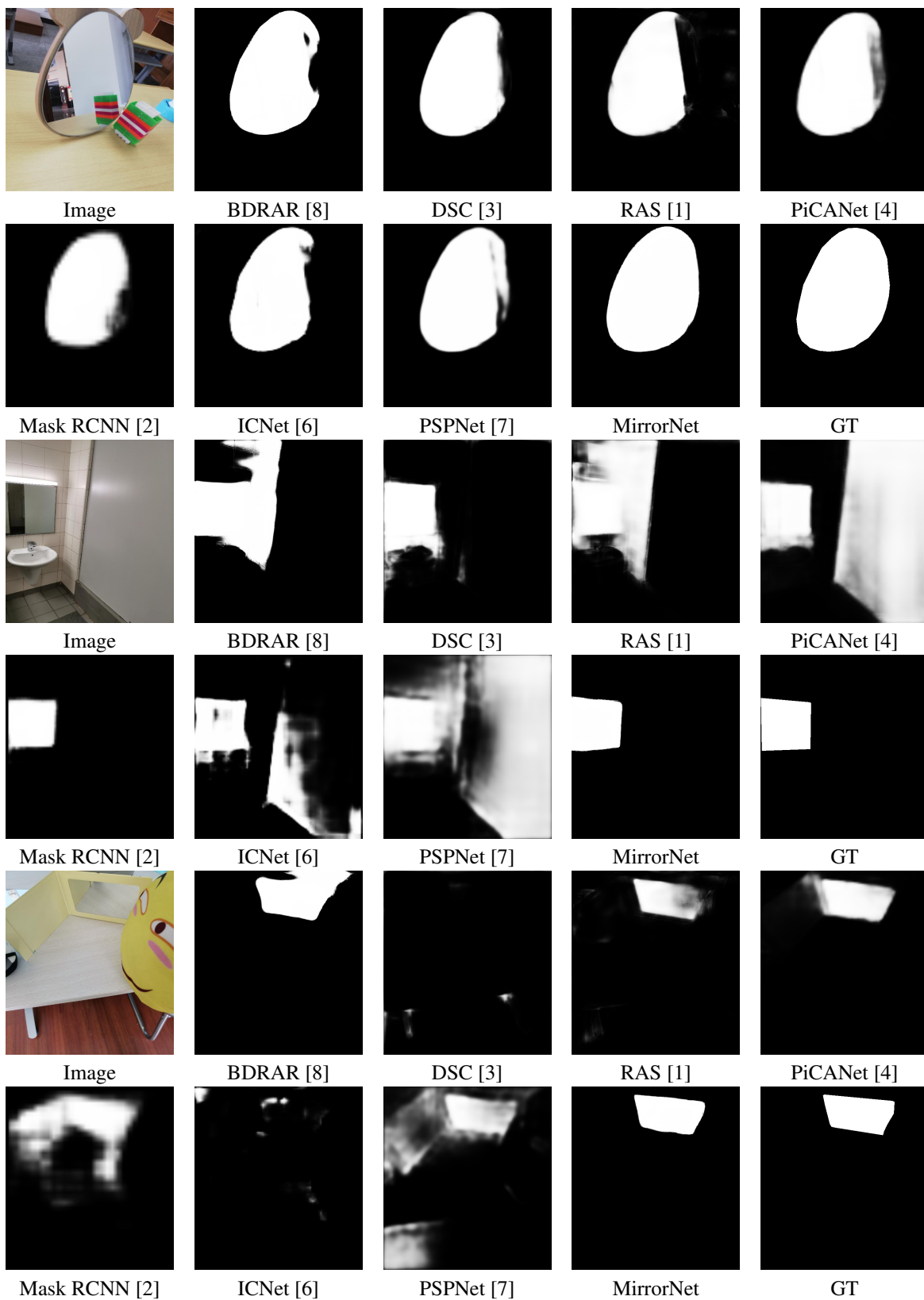
Image	BDRAR [8]	DSC [3]	RAS [1]	PiCANet [4]
Mask RCNN [2]	ICNet [6]	PSPNet [7]	MirrorNet	GT
Image	BDRAR [8]	DSC [3]	RAS [1]	PiCANet [4]
Mask RCNN [2]	ICNet [6]	PSPNet [7]	MirrorNet	GT
Image	BDRAR [8]	DSC [3]	RAS [1]	PiCANet [4]
Mask RCNN [2]	ICNet [6]	PSPNet [7]	MirrorNet	GT

Figure 7. More visual comparison of MirrorNet to the state-of-the-art methods on the proposed MSD test set.
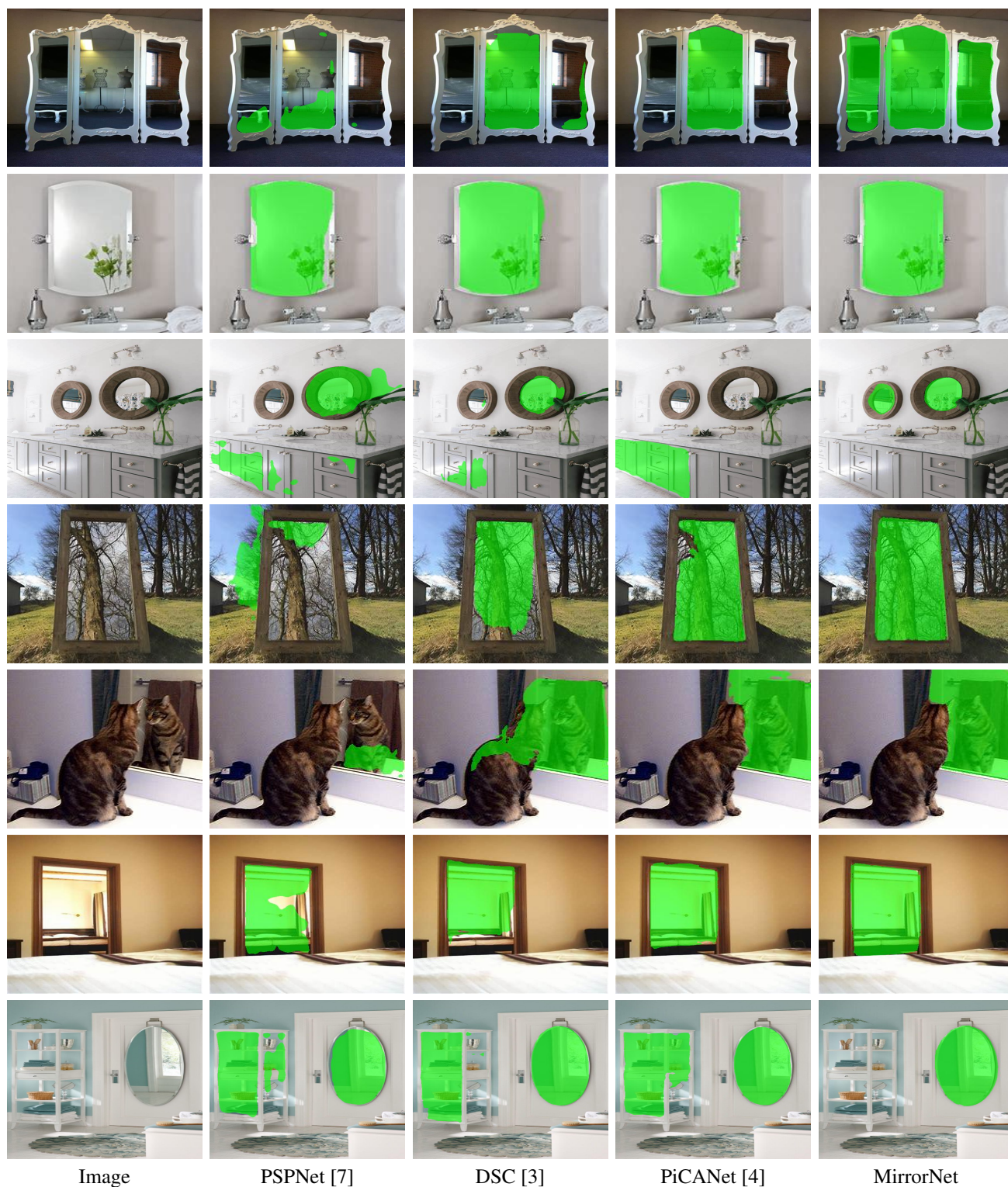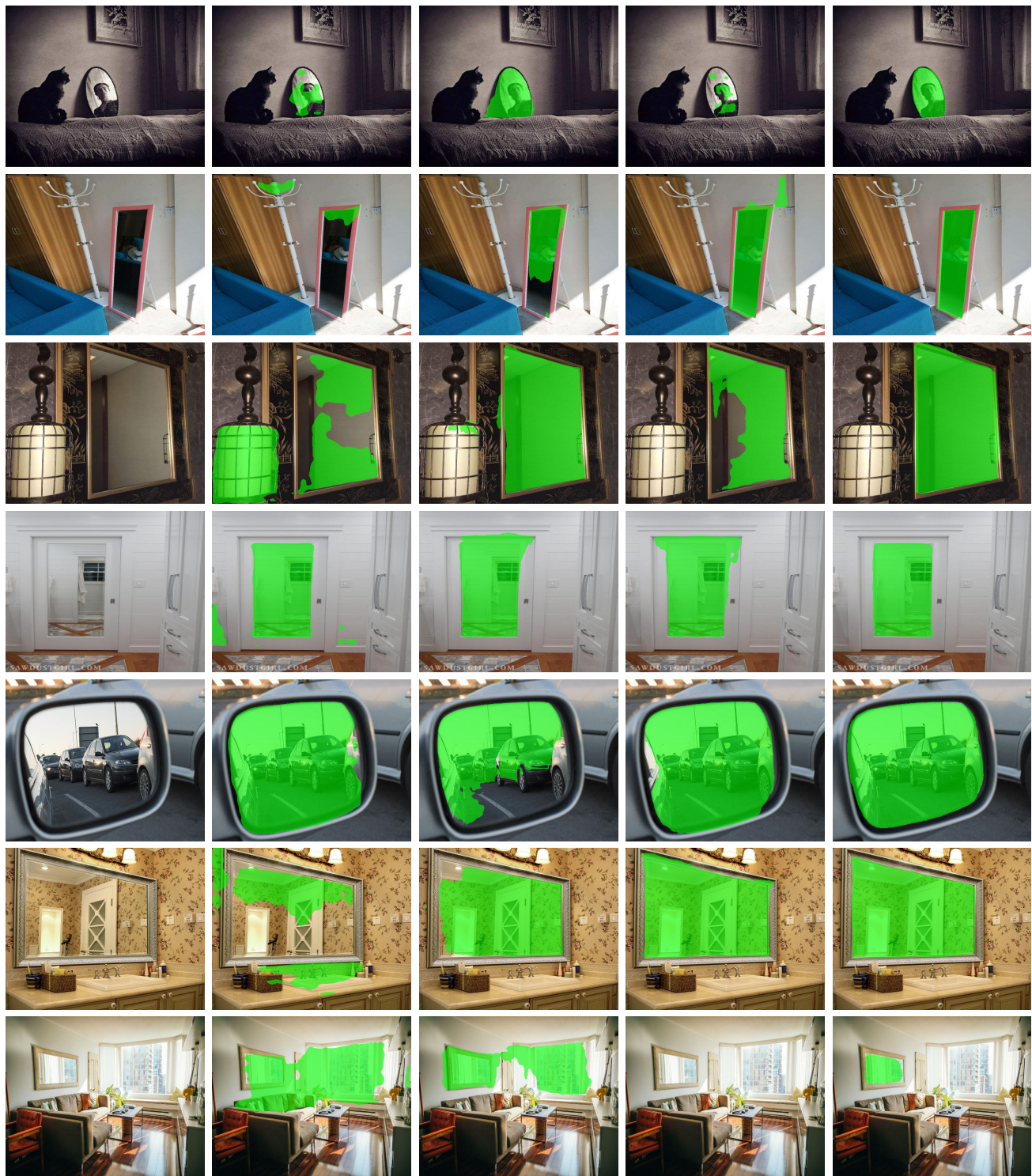
5. Comparison on Challenging Images from the Internet

| Image | PSPNet [7] | DSC [3] | PiCANet [4] | MirrorNet |

Figure 8. More mirror segmentation results on challenging images obtained from the Internet.
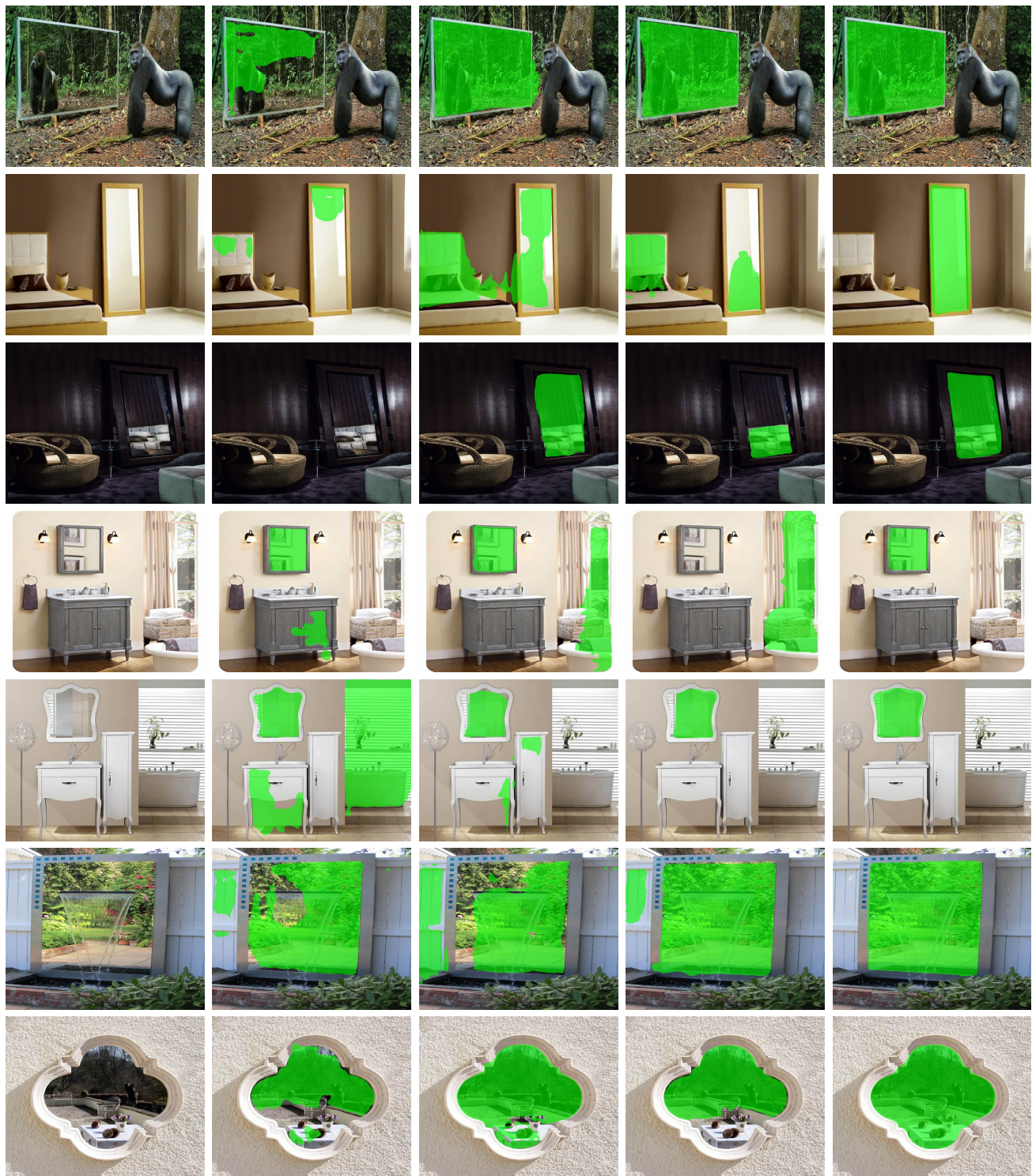
| Image | PSPNet [7] | DSC [3] | PiCANet [4] | MirrorNet |

Figure 9. More mirror segmentation results on challenging images obtained from the Internet.

| Image | PSPNet [7] | DSC [3] | PiCANet [4] | MirrorNet |

Figure 10. More mirror segmentation results on challenging images obtained from the Internet.

References

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