

# Autonomous Robots

## Disambiguation of Human Intent Through Control Space Selection

--Manuscript Draft--

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<b>Abstract:</b>	Assistive shared-control robots have the potential to transform the lives of millions of people afflicted with severe motor impairments as a result of spinal cord or brain injuries. The effectiveness and usefulness of shared-control robots is closely related to their ability to infer the user's needs and intentions and is often a limiting factor for providing appropriate assistance quickly, confidently and accurately. The contributions of this paper are three-fold: first, we propose a goal disambiguation algorithm which enhances the intent inference and assistive capabilities of a shared-control assistive robotic arm. Second, we introduce a novel intent inference algorithm that works in conjunction with the disambiguation scheme, inspired by dynamic field theory in which the time evolution of the probability distribution over goals is specified as a dynamical system. Third, we present a pilot human subject study to evaluate the efficacy of the disambiguation system. This study was performed with eight subjects. Our results suggest that (a) the disambiguation system has a greater utility value as the control interface becomes more limited and the task becomes more complex, (b) subjects demonstrated a diverse range of disambiguation request behavior with a greater concentration in the earlier parts of the trial and (c) there are no differences in the onset of robot assistance between different mode switching paradigms across tasks or across interfaces.	
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4 This is pdfTeX, Version 3.14159265-2.6-1.40.16 (TeX Live 2015/W32TeX)  
5 (preloaded format=pdflatex 2016.4.11) 1 DEC 2017 06:58  
6 entering extended mode  
7 restricted \write18 enabled.  
8 %&-line parsing enabled.  
9 **./gopinathargallauro2017.tex  
10 (../gopinathargallauro2017.tex  
11 LaTeX2e <2016/03/31>  
12 Babel <3.9q> and hyphenation patterns for 81 language(s) loaded.  
13 (c:/TeXLive/2015/texmf-dist/tex/latex/base/fix-cm.sty  
14 Package: fix-cm 2015/01/14 v1.1t fixes to LaTeX  
15 (c:/TeXLive/2015/texmf-dist/tex/latex/base/tslenc.def  
16 File: tslenc.def 2001/06/05 v3.0e (jk/car/fm) Standard LaTeX file  
17 )) (../svjour3.cls  
18 Document Class: svjour3 2007/05/08 v3.2  
19 LaTeX document class for Springer journals  
20 (c:/TeXLive/2015/texmf-dist/tex/latex/base/fleqn.clo  
21 File: fleqn.clo 2015/03/31 v1.1i Standard LaTeX option (flush left  
22 equations)  
23 \mathindent=\dimen102  
24 Applying: [2015/01/01] Make \[ robust on input line 50.  
25 LaTeX Info: Redefining \[ on input line 51.  
26 Already applied: [0000/00/00] Make \[ robust on input line 62.  
27 Applying: [2015/01/01] Make \] robust on input line 74.  
28 LaTeX Info: Redefining \] on input line 75.  
29 Already applied: [0000/00/00] Make \] robust on input line 83.  
30 )  
31 Class Springer-SVJour3 Info: extra/valid Springer sub-package (-> *.clo)  
32 (Springer-SVJour3) not found in option list of \documentclass  
33 (Springer-SVJour3) - autoactivating "global" style.  
34 (../svglov3.clo  
35 File: svglov3.clo 2009/12/18 v3.2 style option for standardised journals  
36 SVJour Class option: svglov3.clo for standardised journals  
37 )  
38 LaTeX Font Info: Redeclaring math symbol \Gamma on input line 147.  
39 LaTeX Font Info: Redeclaring math symbol \Delta on input line 148.  
40 LaTeX Font Info: Redeclaring math symbol \Theta on input line 149.  
41 LaTeX Font Info: Redeclaring math symbol \Lambda on input line 150.  
42 LaTeX Font Info: Redeclaring math symbol \Xi on input line 151.  
43 LaTeX Font Info: Redeclaring math symbol \Pi on input line 152.  
44 LaTeX Font Info: Redeclaring math symbol \Sigma on input line 153.  
45 LaTeX Font Info: Redeclaring math symbol \Upsilon on input line 154.  
46 LaTeX Font Info: Redeclaring math symbol \Phi on input line 155.  
47 LaTeX Font Info: Redeclaring math symbol \Psi on input line 156.  
48 LaTeX Font Info: Redeclaring math symbol \Omega on input line 157.  
49 \logodepth=\dimen103  
50 \headerboxheight=\dimen104  
51 \betweennumberspace=\dimen105  
52 \aftertext=\dimen106  
53 \headlineindent=\dimen107  
54 \c@inst=\count79  
55 \c@auth=\count80  
56 \instindent=\dimen108  
57 \authrun=\box26  
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1  
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4     \authorrunning=\toks14  
5     \titrun=\box27  
6     \titlerunning=\toks15  
7     \combirun=\box28  
8     \c@lastpage=\count81  
9     \rubricwidth=\dimen109  
10    \c@section=\count82  
11    \c@subsection=\count83  
12    \c@subsubsection=\count84  
13    \c@paragraph=\count85  
14    \c@subparagraph=\count86  
15    \spthmsep=\dimen110  
16    \c@theorem=\count87  
17    \c@case=\count88  
18    \c@conjecture=\count89  
19    \c@corollary=\count90  
20    \c@definition=\count91  
21    \c@example=\count92  
22    \c@exercise=\count93  
23    \c@lemma=\count94  
24    \c@note=\count95  
25    \c@problem=\count96  
26    \c@property=\count97  
27    \c@proposition=\count98  
28    \c@question=\count99  
29    \c@solution=\count100  
30    \c@remark=\count101  
31    \c@figure=\count102  
32    \c@table=\count103  
33    \abovecaptionskip=\skip41  
34    \belowcaptionskip=\skip42  
35    \figcapgap=\dimen111  
36    \tabcapgap=\dimen112  
37    \figgap=\dimen113  
38    \bibindent=\dimen114  
39    \tempcntc=\count104  
40 ) (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/graphicx.sty  
41 Package: graphicx 2014/10/28 v1.0g Enhanced LaTeX Graphics (DPC, SPQR)  
42 (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/keyval.sty  
43 Package: keyval 2014/10/28 v1.15 key=value parser (DPC)  
44 \KV@toks@=\toks16  
45 ) (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/graphics.sty  
46 Package: graphics 2016/01/03 v1.0q Standard LaTeX Graphics (DPC, SPQR)  
47 (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/trig.sty  
48 Package: trig 2016/01/03 v1.10 sin cos tan (DPC)  
49 ) (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/graphics.cfg  
50 File: graphics.cfg 2010/04/23 v1.9 graphics configuration of TeX Live  
51 )  
52 Package graphics Info: Driver file: pdftex.def on input line 95.  
53 (c:/TeXLive/2015/texmf-dist/tex/latex/pdftex-def/pdftex.def  
54 File: pdftex.def 2011/05/27 v0.06d Graphics/color for pdfTeX  
55 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/infwarerr.sty  
56 Package: infwarerr 2010/04/08 v1.3 Providing info/warning/error messages  
57 (HO)  
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4 ) (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/ltxcmds.sty
5 Package: ltxcmds 2011/11/09 v1.22 LaTeX kernel commands for general use
6 (HO)
7 )
8 \Gread@gobject=\count105
9 ))
10 \Gin@req@height=\dimen115
11 \Gin@req@width=\dimen116
12 ) (c:/TeXLive/2015/texmf-dist/tex/latex/amssymb/amssymb.sty
13 Package: amssymb 2013/01/14 v3.01 AMS font symbols
14 (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsmath.sty
15 Package: amsmath 2016/03/10 v2.15b AMS math features
16 Package: amsfonts 2013/01/14 v3.01 Basic AMSFonts support
17 \@emptytoks=\toks17
18 \symAMSA=\mathgroup4
19 \symAMSB=\mathgroup5
20 LaTeX Font Info: Overwriting math alphabet `mathfrak' in version
21 `bold'
22 (Font) U/euf/m/n --> U/euf/b/n on input line 106.
23 )) (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsmath.sty
24 Package: amsmath 2016/03/10 v2.15b AMS math features
25 \@mathmargin=\skip43
26 For additional information on amsmath, use the `?' option.
27 (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amstext.sty
28 Package: amstext 2000/06/29 v2.01 AMS text
29 (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsgen.sty
30 File: amsgen.sty 1999/11/30 v2.0 generic functions
31 \@emptytoks=\toks18
32 \ex@=\dimen117
33 )) (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsbsy.sty
34 Package: amsbsy 1999/11/29 v1.2d Bold Symbols
35 \pmbraise@=\dimen118
36 ) (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsopn.sty
37 Package: amsopn 2016/03/08 v2.02 operator names
38 )
39 \inf@bad=\count106
40 LaTeX Info: Redefining \frac on input line 199.
41 \uproot@=\count107
42 \leftroot@=\count108
43 LaTeX Info: Redefining \overline on input line 297.
44 \classnum@=\count109
45 \DOTSCASE@=\count110
46 LaTeX Info: Redefining \ldots on input line 394.
47 LaTeX Info: Redefining \dots on input line 397.
48 LaTeX Info: Redefining \cdots on input line 518.
49 \Mathstrutbox@=\box29
50 \strutbox@=\box30
51 \big@size=\dimen119
52 LaTeX Font Info: Redeclaring font encoding OML on input line 634.
53 LaTeX Font Info: Redeclaring font encoding OMS on input line 635.
54
55 Package amsmath Warning: Unable to redefine math accent \vec.
56
57 \macc@depth=\count111
58 \c@MaxMatrixCols=\count112
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4 \dotsspace@=\muskip10  
5 \c@parentequation=\count113  
6 \dspbrk@lvl=\count114  
7 \tag@help=\toks19  
8 \row@=\count115  
9 \column@=\count116  
10 \maxfields@=\count117  
11 \andhelp@=\toks20  
12 \eqnshift@=\dimen120  
13 \alignsep@=\dimen121  
14 \tagshift@=\dimen122  
15 \tagwidth@=\dimen123  
16 \totwidth@=\dimen124  
17 \lineht@=\dimen125  
18 \envbody@=\toks21  
19 \multlinegap=\skip44  
20 \multlinetaggap=\skip45  
21 \mathdisplay@stack=\toks22  
22 LaTeX Info: Redefining \[ on input line 2739.  
23 LaTeX Info: Redefining \] on input line 2740.  
24 ) (c:/TeXLive/2015/texmf-dist/tex/latex/base/latexsym.sty  
25 Package: latexsym 1998/08/17 v2.2e Standard LaTeX package (lasy symbols)  
26 \symlasy=\mathgroup6  
27 LaTeX Font Info: Overwriting symbol font `lasy' in version `bold'  
28 (Font) U/lasy/m/n --> U/lasy/b/n on input line 52.  
29 ) (c:/TeXLive/2015/texmf-dist/tex/latex/float/float.sty  
30 Package: float 2001/11/08 v1.3d Float enhancements (AL)  
31 \c@float@type=\count118  
32 \float@exts=\toks23  
33 \float@box=\box31  
34 \float@everytoks=\toks24  
35 \float@capt=\box32  
36 ) (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/epsfig.sty  
37 Package: epsfig 1999/02/16 v1.7a (e)psfig emulation (SPQR)  
38 \epsfxsize=\dimen126  
39 \epsfysize=\dimen127  
40 ) (c:/TeXLive/2015/texmf-dist/tex/latex/subfigure/subfigure.sty  
41 Package: subfigure 2002/03/15 v2.1.5 subfigure package  
42 \subfigtopskip=\skip46  
43 \subfigcapskip=\skip47  
44 \subfigcaptionadj=\dimen128  
45 \subfigbottomskip=\skip48  
46 \subfigcapmargin=\dimen129  
47 \subfiglabelskip=\skip49  
48 \c@subfigure=\count119  
49 \c@lofdepth=\count120  
50 \c@subtable=\count121  
51 \c@lotdepth=\count122  
*****  
52 * Local config file subfigure.cfg used *  
53 *****  
54 (c:/TeXLive/2015/texmf-dist/tex/latex/subfigure/subfigure.cfg)  
55 \subfig@top=\skip50  
56 \subfig@bottom=\skip51  
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1  
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4 ) (c:/TeXLive/2015/texmf-dist/tex/latex/mathtools/mathtools.sty  
5 Package: mathtools 2015/11/12 v1.18 mathematical typesetting tools  
6 (c:/TeXLive/2015/texmf-dist/tex/latex/tools/calc.sty  
7 Package: calc 2014/10/28 v4.3 Infix arithmetic (KKT,FJ)  
8 \calc@Acount=\count123  
9 \calc@Bcount=\count124  
10 \calc@Adimen=\dimen130  
11 \calc@Bdimen=\dimen131  
12 \calc@Askip=\skip52  
13 \calc@Bskip=\skip53  
14 LaTeX Info: Redefining \setlength on input line 80.  
15 LaTeX Info: Redefining \addtolength on input line 81.  
16 \calc@Ccount=\count125  
17 \calc@Cskip=\skip54  
18 ) (c:/TeXLive/2015/texmf-dist/tex/latex/mathtools/mhsetup.sty  
19 Package: mhsetup 2010/01/21 v1.2a programming setup (MH)  
20 )  
21 LaTeX Info: Thecontrolsequence`\\('isalreadyrobust on input line 129.  
22 LaTeX Info: Thecontrolsequence`\\)'isalreadyrobust on input line 129.  
23 LaTeX Info: Thecontrolsequence`\\['isalreadyrobust on input line 129.  
24 LaTeX Info: Thecontrolsequence`\\]'isalreadyrobust on input line 129.  
25 \g_MT_multlinerow_int=\count126  
26 \l_MT_multwidth_dim=\dimen132  
27 \origjot=\skip55  
28 \l_MT_shortvdotswithinadjustabove_dim=\dimen133  
29 \l_MT_shortvdotswithinadjustbelow_dim=\dimen134  
30 \l_MT_above_intertext_sep=\dimen135  
31 \l_MT_below_intertext_sep=\dimen136  
32 \l_MT_above_shortintertext_sep=\dimen137  
33 \l_MT_below_shortintertext_sep=\dimen138  
34 ) (c:/TeXLive/2015/texmf-dist/tex/latex/bbm-macros/bbm.sty  
35 Package: bbm 1999/03/15 V 1.2 provides fonts for set symbols - TH  
36 LaTeX Font Info: Overwriting math alphabet `\\mathbbm' in version  
37 `bold'  
38 (Font) U/bbm/m/n --> U/bbm/bx/n on input line 33.  
39 LaTeX Font Info: Overwriting math alphabet `\\mathbbmss' in version  
40 `bold'  
41 (Font) U/bbmss/m/n --> U/bbmss/bx/n on input line 35.  
42 ) (c:/TeXLive/2015/texmf-dist/tex/latex/lipsum/lipsum.sty  
43 Package: lipsum 2014/07/27 v1.3 150 paragraphs of Lorem Ipsum dummy text  
44 \c@lipsp@count=\count127  
45 ) (c:/TeXLive/2015/texmf-dist/tex/latex/adjustbox/adjustbox.sty  
46 Package: adjustbox 2012/05/21 v1.0 Adjusting TeX boxes (trim, clip, ...)  
47 (c:/TeXLive/2015/texmf-dist/tex/latex/xkeyval/xkeyval.sty  
48 Package: xkeyval 2014/12/03 v2.7a package option processing (HA)  
49 (c:/TeXLive/2015/texmf-dist/tex/generic/xkeyval/xkeyval.tex  
50 (c:/TeXLive/2015/te  
51 xmfdist/tex/generic/xkeyval/xkvutils.tex  
52 \XKV@toks=\toks25  
53 \XKV@tempa@toks=\toks26  
54 )  
55 \XKV@depth=\count128  
56 File: xkeyval.tex 2014/12/03 v2.7a key=value parser (HA)  
57 )) (c:/TeXLive/2015/texmf-dist/tex/latex/adjustbox/adjcalc.sty  
58  
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4 Package: adjcalc 2012/05/16 v1.1 Provides advanced setlength with
5 multiple back
6 -ends (calc, etex, pgfmath)
7 ) (c:/TeXLive/2015/texmf-dist/tex/latex/adjustbox/trimclip.sty
8 Package: trimclip 2012/05/16 v1.0 Trim and clip general TeX material
9 (c:/TeXLive/2015/texmf-dist/tex/latex/collectbox/collectbox.sty
10 Package: collectbox 2012/05/17 v0.4b Collect macro arguments as boxes
11 \collectedbox=\box33
12 )
13 \tc@llx=\dimen139
14 \tc@lly=\dimen140
15 \tc@urx=\dimen141
16 \tc@ury=\dimen142
17 Package trimclip Info: Using driver 'tc-pdftex.def'.
18 (c:/TeXLive/2015/texmf-dist/tex/latex/adjustbox/tc-pdftex.def
19 File: tc-pdftex.def 2012/05/13 v1.0 Clipping driver for pdftex
20 ))
21 \adjbox@Width=\dimen143
22 \adjbox@Height=\dimen144
23 \adjbox@Depth=\dimen145
24 \adjbox@Totalheight=\dimen146
25 (c:/TeXLive/2015/texmf-dist/tex/latex/ifoddpage/ifoddpage.sty
26 Package: ifoddpage 2011/09/13 v1.0 Conditionals for odd/even page
27 detection
28 \c@checkoddpage=\count129
29 ) (c:/TeXLive/2015/texmf-dist/tex/latex/varwidth/varwidth.sty
30 Package: varwidth 2009/03/30 ver 0.92; Variable-width minipages
31 \@vwid@box=\box34
32 \sift@deathcycles=\count130
33 \@vwid@loff=\dimen147
34 \@vwid@roff=\dimen148
35 )) (c:/TeXLive/2015/texmf-dist/tex/generic/ulem/ulem.sty
36 \UL@box=\box35
37 \UL@hyphenbox=\box36
38 \UL@skip=\skip56
39 \UL@hook=\toks27
40 \UL@height=\dimen149
41 \UL@pe=\count131
42 \UL@pixel=\dimen150
43 \ULC@box=\box37
44 Package: ulem 2012/05/18
45 \ULdepth=\dimen151
46 ) (c:/TeXLive/2015/texmf-dist/tex/latex/wrapfig/wrapfig.sty
47 \wrapoverhang=\dimen152
48 \WF@size=\dimen153
49 \c@WF@wrappedlines=\count132
50 \WF@box=\box38
51 \WF@everypar=\toks28
52 Package: wrapfig 2003/01/31 v 3.6
53 ) (c:/TeXLive/2015/texmf-dist/tex/latex/multirow/multirow.sty
54 \bigstrutjot=\dimen154
55 ) (c:/TeXLive/2015/texmf-dist/tex/latex/preprint/balance.sty
56 Package: balance 1999/02/23 4.3 (PWD)
57 \oldvsize=\dimen155
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4 ) (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/color.sty  
5 Package: color 2016/01/03 v1.1b Standard LaTeX Color (DPC)  
6 (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/color.cfg  
7 File: color.cfg 2007/01/18 v1.5 color configuration of teTeX/TeXLive  
8 )  
9 Package color Info: Driver file: pdftex.def on input line 143.  
10 ) (c:/TeXLive/2015/texmf-dist/tex/latex/url/url.sty  
11 \Urlmuskip=\muskip11  
12 Package: url 2013/09/16 ver 3.4 Verb mode for urls, etc.  
13 ) (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/hyperref.sty  
14 Package: hyperref 2012/11/06 v6.83m Hypertext links for LaTeX  
15 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/hobsub-hyperref.sty  
16 Package: hobsub-hyperref 2012/05/28 v1.13 Bundle oberdiek, subset  
17 hyperref (HO)  
18  
19 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/hobsub-generic.sty  
20 Package: hobsub-generic 2012/05/28 v1.13 Bundle oberdiek, subset generic  
21 (HO)  
22 Package: hobsub 2012/05/28 v1.13 Construct package bundles (HO)  
23 Package hobsub Info: Skipping package `infwarerr' (already loaded).  
24 Package hobsub Info: Skipping package `ltxcmds' (already loaded).  
25 Package: ifluatex 2010/03/01 v1.3 Provides the ifluatex switch (HO)  
26 Package ifluatex Info: LuaTeX not detected.  
27 Package: ifvtex 2010/03/01 v1.5 Detect VTeX and its facilities (HO)  
28 Package ifvtex Info: VTeX not detected.  
29 Package: intcalc 2007/09/27 v1.1 Expandable calculations with integers  
30 (HO)  
31 Package: ifpdf 2011/01/30 v2.3 Provides the ifpdf switch (HO)  
32 Package ifpdf Info: pdfTeX in PDF mode is detected.  
33 Package: etexcmds 2011/02/16 v1.5 Avoid name clashes with e-TeX commands  
34 (HO)  
35 Package etexcmds Info: Could not find \expanded.  
36 (etexcmds) That can mean that you are not using pdfTeX 1.50  
37 or  
38 (etexcmds) that some package has redefined \expanded.  
39 (etexcmds) In the latter case, load this package earlier.  
40 Package: kvsetkeys 2012/04/25 v1.16 Key value parser (HO)  
41 Package: kvdefinekeys 2011/04/07 v1.3 Define keys (HO)  
42 Package: pdftexcmds 2011/11/29 v0.20 Utility functions of pdfTeX for  
43 LuaTeX (HO)  
44 )  
45 Package pdftexcmds Info: LuaTeX not detected.  
46 Package pdftexcmds Info: \pdf@primitive is available.  
47 Package pdftexcmds Info: \pdf@ifprimitive is available.  
48 Package pdftexcmds Info: \pdfdraftmode found.  
49 Package: pdfescape 2011/11/25 v1.13 Implements pdfTeX's escape features  
50 (HO)  
51 Package: bigintcalc 2012/04/08 v1.3 Expandable calculations on big  
52 integers (HO)  
53 )  
54 Package: bitset 2011/01/30 v1.1 Handle bit-vector datatype (HO)  
55 Package: uniquecounter 2011/01/30 v1.2 Provide unlimited unique counter  
56 (HO)  
57 )  
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4 Package hobsub Info: Skipping package `hobsub' (already loaded).
5 Package: letltmacro 2010/09/02 v1.4 Let assignment for LaTeX macros (HO)
6 Package: hopatch 2012/05/28 v1.2 Wrapper for package hooks (HO)
7 Package: xcolor-patch 2011/01/30 xcolor patch
8 Package: atveryend 2011/06/30 v1.8 Hooks at the very end of document (HO)
9 Package atveryend Info: \enddocument detected (standard20110627).
10 Package: atbegshi 2011/10/05 v1.16 At begin shipout hook (HO)
11 Package: refcount 2011/10/16 v3.4 Data extraction from label references
12 (HO)
13 Package: hycolor 2011/01/30 v1.7 Color options for hyperref/bookmark (HO)
14 ) (c:/TeXLive/2015/texmf-dist/tex/generic/ifxetex/ifxetex.sty
15 Package: ifxetex 2010/09/12 v0.6 Provides ifxetex conditional
16 ) (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/auxhook.sty
17 Package: auxhook 2011/03/04 v1.3 Hooks for auxiliary files (HO)
18 ) (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/kvoptions.sty
19 Package: kvoptions 2011/06/30 v3.11 Key value format for package options
20 (HO)
21 )
22 \@linkdim=\dimen156
23 \Hy@linkcounter=\count133
24 \Hy@pagecounter=\count134
25 (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/pd1enc.def
26 File: pd1enc.def 2012/11/06 v6.83m Hyperref: PDFDocEncoding definition
27 (HO)
28 )
29 \Hy@SavedSpaceFactor=\count135
30 (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/hyperref.cfg
31 File: hyperref.cfg 2002/06/06 v1.2 hyperref configuration of TeXLive
32 )
33 Package hyperref Info: Option `breaklinks' set `true' on input line 4319.
34 Package hyperref Info: Hyper figures OFF on input line 4443.
35 Package hyperref Info: Link nesting OFF on input line 4448.
36 Package hyperref Info: Hyper index ON on input line 4451.
37 Package hyperref Info: Plain pages OFF on input line 4458.
38 Package hyperref Info: Backreferencing OFF on input line 4463.
39 Package hyperref Info: Implicit mode ON; LaTeX internals redefined.
40 Package hyperref Info: Bookmarks ON on input line 4688.
41 \c@Hy@tempcnt=\count136
42 LaTeX Info: Redefining \url on input line 5041.
43 \XeTeXLinkMargin=\dimen157
44 \Fld@menulength=\count137
45 \Field@Width=\dimen158
46 \Fld@charsize=\dimen159
47 Package hyperref Info: Hyper figures OFF on input line 6295.
48 Package hyperref Info: Link nesting OFF on input line 6300.
49 Package hyperref Info: Hyper index ON on input line 6303.
50 Package hyperref Info: backreferencing OFF on input line 6310.
51 Package hyperref Info: Link coloring OFF on input line 6315.
52 Package hyperref Info: Link coloring with OCG OFF on input line 6320.
53 Package hyperref Info: PDF/A mode OFF on input line 6325.
54 LaTeX Info: Redefining \ref on input line 6365.
55 LaTeX Info: Redefining \pageref on input line 6369.
56 \Hy@abspage=\count138
57 \c@Item=\count139
58
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2
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4 \c@Hfootnote=\count140
5 )
6
7 Package hyperref Message: Driver (autodetected): hpdfTeX.
8
9 (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/hpftex.def
10 File: hpftex.def 2012/11/06 v6.83m Hyperref driver for pdfTeX
11 \Fld@listcount=\count141
12 \c@bookmark@seq@number=\count142
13 (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/rerunfilecheck.sty
14 Package: rerunfilecheck 2011/04/15 v1.7 Rerun checks for auxiliary files
15 (HO)
16 Package uniquecounter Info: New unique counter `rerunfilecheck' on input
17 line 2
18 82.
19 )
20 \Hy@SectionHShift=\skip57
21 ) (./breakcites.sty) (c:/TeXLive/2015/texmf-
22 dist/tex/latex/microtype/microtype.
23 sty
24 Package: microtype 2013/05/23 v2.5a Micro-typographical refinements (RS)
25 \MT@toks=\toks29
26 \MT@count=\count143
27 LaTeX Info: Redefining \textls on input line 766.
28 \MT@outer@kern=\dimen160
29 LaTeX Info: Redefining \textmicrotypecontext on input line 1285.
30 \MT@listname@count=\count144
31 (c:/TeXLive/2015/texmf-dist/tex/latex/microtype/microtype-pdftex.def
32 File: microtype-pdftex.def 2013/05/23 v2.5a Definitions specific to
33 pdftex (RS)
34
35 LaTeX Info: Redefining \lsstyle on input line 915.
36 LaTeX Info: Redefining \lslig on input line 915.
37 \MT@outer@space=\skip58
38 )
39 Package microtype Info: Loading configuration file microtype.cfg.
40 (c:/TeXLive/2015/texmf-dist/tex/latex/microtype/microtype.cfg
41 File: microtype.cfg 2013/05/23 v2.5a microtype main configuration file
42 (RS)
43 ! Extra \else.
44 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
45                                     \def #3{\#6}\expandafter
46 \e...
47 1.64      }
48
49 I'm ignoring this; it doesn't match any \if.
50
51 ! Extra \else.
52 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
53                                     \def #3{\#6}\expandafter
54 \e...
55 1.64      }
56
57 I'm ignoring this; it doesn't match any \if.
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4
5 ! Extra \else.
6 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
7                                     \def #3{\#6}\expandafter
8 \e...
9 1.64    }
10
11 I'm ignoring this; it doesn't match any \if.
12
13 ! Extra \else.
14 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
15                                     \def #3{\#6}\expandafter
16 \e...
17 1.64    }
18
19 I'm ignoring this; it doesn't match any \if.
20
21 ! Extra \else.
22 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
23                                     \def #3{\#6}\expandafter
24 \e...
25 1.64    }
26
27 I'm ignoring this; it doesn't match any \if.
28
29 ! Extra \else.
30 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
31                                     \def #3{\#6}\expandafter
32 \e...
33 1.71    }
34
35 I'm ignoring this; it doesn't match any \if.
36
37 ! Extra \else.
38 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
39                                     \def #3{\#6}\expandafter
40 \e...
41 1.71    }
42
43 I'm ignoring this; it doesn't match any \if.
44
45 ! Extra \else.
46 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
47                                     \def #3{\#6}\expandafter
48 \e...
49 1.71    }
50
51 I'm ignoring this; it doesn't match any \if.
52
53 ! Extra \else.
54 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
55                                     \def #3{\#6}\expandafter
56 \e...
57 1.71    }
58
59 I'm ignoring this; it doesn't match any \if.
60
61 ! Extra \else.
62 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
63                                     \def #3{\#6}\expandafter
64 \e...
65 1.71    }
```

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4
5 I'm ignoring this; it doesn't match any \if.
6
7 ! Extra \else.
8 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
9                                     \def #3{#6}\expandafter
10
11 \e...
12 1.71      }
13
14 I'm ignoring this; it doesn't match any \if.
15
16 ! Extra \else.
17 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
18                                     \def #3{#6}\expandafter
19
20 \e...
21 1.81      }
22
23 I'm ignoring this; it doesn't match any \if.
24
25 ! Extra \else.
26 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
27                                     \def #3{#6}\expandafter
28
29 \e...
30 1.81      }
31
32 I'm ignoring this; it doesn't match any \if.
33
34 ! Extra \else.
35 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
36                                     \def #3{#6}\expandafter
37
38 \e...
39 1.81      }
40
41 I'm ignoring this; it doesn't match any \if.
42
43 ! Extra \else.
44 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
45                                     \def #3{#6}\expandafter
46
47 \e...
48 1.81      }
49
50 I'm ignoring this; it doesn't match any \if.
51
52 ! Extra \else.
53 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
54                                     \def #3{#6}\expandafter
55
56 \e...
57 1.81      }
58
59 I'm ignoring this; it doesn't match any \if.
60
61 ! Extra \else.
62 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
63
64
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```

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```

\def #3{\#6}\expandafter  
\e...  
1.86 }

I'm ignoring this; it doesn't match any \if.

! Extra \else.  
\XKV@wh@list ...r \expandafter \XKV@wh@list \else  
\def #3{\#6}\expandafter  
\e...  
1.86 }

I'm ignoring this; it doesn't match any \if.

! Extra \else.  
\XKV@wh@list ...r \expandafter \XKV@wh@list \else  
\def #3{\#6}\expandafter  
\e...  
1.86 }

I'm ignoring this; it doesn't match any \if.

! Extra \else.  
\XKV@wh@list ...r \expandafter \XKV@wh@list \else  
\def #3{\#6}\expandafter  
\e...  
1.86 }

I'm ignoring this; it doesn't match any \if.

! Extra \else.  
\XKV@wh@list ...r \expandafter \XKV@wh@list \else  
\def #3{\#6}\expandafter  
\e...  
1.86 }

I'm ignoring this; it doesn't match any \if.

! Extra \else.  
\XKV@wh@list ...r \expandafter \XKV@wh@list \else  
\def #3{\#6}\expandafter  
\e...  
1.89 { font = /\*/\*/\*/\*/\* }

I'm ignoring this; it doesn't match any \if.

! Extra \else.  
\XKV@wh@list ...r \expandafter \XKV@wh@list \else  
\def #3{\#6}\expandafter  
\e...  
1.89 { font = /\*/\*/\*/\*/\* }

I'm ignoring this; it doesn't match any \if.

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1
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3
4 ! Extra \else.
5 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
6                                     \def #3{\#6}\expandafter
7 \e...
8 1.89    { font = *//*/*/* }
9
10 I'm ignoring this; it doesn't match any \if.
11
12 ! Extra \else.
13 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
14                                     \def #3{\#6}\expandafter
15 \e...
16 1.89    { font = *//*/*/* }
17
18 I'm ignoring this; it doesn't match any \if.
19
20 ! Extra \else.
21 \XKV@wh@list ...r \expandafter \XKV@wh@list \else
22                                     \def #3{\#6}\expandafter
23 \e...
24 1.89    { font = *//*/*/* }
25
26 I'm ignoring this; it doesn't match any \if.
27
28
29 )) (c:/TeXLive/2015/texmf-dist/tex/latex/natbib/natbib.sty
30 Package: natbib 2010/09/13 8.31b (PWD, AO)
31 \bibhang=\skip59
32 \bibsep=\skip60
33 LaTeX Info: Redefining \cite on input line 694.
34 \c@NAT@ctr=\count145
35 ) (c:/TeXLive/2015/texmf-dist/tex/latex/algorithms/algorithm.sty
36 Package: algorithm 2009/08/24 v0.1 Document Style `algorithm' - floating
37 enviro
38 nment
39 (c:/TeXLive/2015/texmf-dist/tex/latex/base/ifthen.sty
40 Package: ifthen 2014/09/29 v1.1c Standard LaTeX ifthen package (DPC)
41 )
42 \@float@every@algorithm=\toks30
43 \c@algorithm=\count146
44 ) (c:/TeXLive/2015/texmf-dist/tex/latex/algorithms/algorithmic.sty
45 Package: algorithmic 2009/08/24 v0.1 Document Style `algorithmic'
46 \c@ALC@unique=\count147
47 \c@ALC@line=\count148
48 \c@ALC@rem=\count149
49 \c@ALC@depth=\count150
50 \ALC@tlm=\skip61
51 \algorithmicindent=\skip62
52 ) (c:/TeXLive/2015/texmf-dist/tex/latex/breqn/breqn.sty
53 (c:/TeXLive/2015/texmf-
54 dist/tex/latex/l3kernel/expl3.sty
55 Package: expl3 2016/03/28 v6468 L3 programming layer (loader)
56 (c:/TeXLive/2015/texmf-dist/tex/latex/l3kernel/expl3-code.tex
57 Package: expl3 2016/03/28 v6468 L3 programming layer (code)
58 L3 Module: l3bootstrap 2016/02/12 v6412 L3 Bootstrap code
59
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1
2
3
4 L3 Module: l3names 2016/03/11 v6433 L3 Namespace for primitives
5 L3 Module: l3basics 2015/11/22 v6315 L3 Basic definitions
6 L3 Module: l3expan 2015/09/10 v5983 L3 Argument expansion
7 L3 Module: l3tl 2016/03/26 v6465 L3 Token lists
8 L3 Module: l3str 2016/03/24 v6441 L3 Strings
9 L3 Module: l3seq 2015/08/05 v5777 L3 Sequences and stacks
10 L3 Module: l3int 2016/03/24 v6441 L3 Integers
11 \c_max_int=\count151
12 \l_tmpa_int=\count152
13 \l_tmpb_int=\count153
14 \g_tmpa_int=\count154
15 \g_tmpb_int=\count155
16 L3 Module: l3quark 2015/08/17 v5855 L3 Quarks
17 L3 Module: l3prg 2015/11/01 v6216 L3 Control structures
18 \g_prg_map_int=\count156
19 L3 Module: l3clist 2015/09/02 v5901 L3 Comma separated lists
20 L3 Module: l3token 2016/03/26 v6465 L3 Experimental token manipulation
21 L3 Module: l3prop 2016/01/05 v6366 L3 Property lists
22 L3 Module: l3msg 2016/03/26 v6464 L3 Messages
23 L3 Module: l3file 2016/03/25 v6458 L3 File and I/O operations
24 \l_iow_line_count_int=\count157
25 \l_iow_target_count_int=\count158
26 \l_iow_current_line_int=\count159
27 \l_iow_current_word_int=\count160
28 \l_iow_current_indentation_int=\count161
29 L3 Module: l3skip 2016/01/05 v6366 L3 Dimensions and skips
30 \c_zero_dim=\dimen161
31 \c_max_dim=\dimen162
32 \l_tmpa_dim=\dimen163
33 \l_tmpb_dim=\dimen164
34 \g_tmpa_dim=\dimen165
35 \g_tmpb_dim=\dimen166
36 \c_zero_skip=\skip63
37 \c_max_skip=\skip64
38 \l_tmpa_skip=\skip65
39 \l_tmpb_skip=\skip66
40 \g_tmpa_skip=\skip67
41 \g_tmpb_skip=\skip68
42 \c_zero_muskip=\muskip12
43 \c_max_muskip=\muskip13
44 \l_tmpa_muskip=\muskip14
45 \l_tmpb_muskip=\muskip15
46 \g_tmpa_muskip=\muskip16
47 \g_tmpb_muskip=\muskip17
48 L3 Module: l3keys 2015/11/17 v6284 L3 Key-value interfaces
49 \g_keyval_level_int=\count162
50 \l_keys_choice_int=\count163
51 L3 Module: l3fp 2016/03/26 v6465 L3 Floating points
52 \c_fp_leading_shift_int=\count164
53 \c_fp_middle_shift_int=\count165
54 \c_fp_trailing_shift_int=\count166
55 \c_fp_big_leading_shift_int=\count167
56 \c_fp_big_middle_shift_int=\count168
57 \c_fp_big_trailing_shift_int=\count169
58
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2
3
4 \c_fp_Bigg_leading_shift_int=\count170
5 \c_fp_Bigg_middle_shift_int=\count171
6 \c_fp_Bigg_trailing_shift_int=\count172
7 L3 Module: l3box 2015/08/09 v5822 L3 Experimental boxes
8 \c_empty_box=\box39
9 \l_tmpa_box=\box40
10 \l_tmpb_box=\box41
11 \g_tmpa_box=\box42
12 \g_tmpb_box=\box43
13 L3 Module: l3coffins 2016/03/24 v6440 L3 Coffin code layer
14 \l_coffin_internal_box=\box44
15 \l_coffin_internal_dim=\dimen167
16 \l_coffin_offset_x_dim=\dimen168
17 \l_coffin_offset_y_dim=\dimen169
18 \l_coffin_x_dim=\dimen170
19 \l_coffin_y_dim=\dimen171
20 \l_coffin_x_prime_dim=\dimen172
21 \l_coffin_y_prime_dim=\dimen173
22 \c_empty_coffin=\box45
23 \l_coffin_aligned_coffin=\box46
24 \l_coffin_aligned_internal_coffin=\box47
25 \l_tmpa_coffin=\box48
26 \l_tmpb_coffin=\box49
27 \l_coffin_display_coffin=\box50
28 \l_coffin_display_coord_coffin=\box51
29 \l_coffin_display_pole_coffin=\box52
30 \l_coffin_display_offset_dim=\dimen174
31 \l_coffin_display_x_dim=\dimen175
32 \l_coffin_display_y_dim=\dimen176
33 L3 Module: l3color 2014/08/23 v5354 L3 Experimental color support
34 L3 Module: l3sys 2015/09/25 v6087 L3 Experimental system/runtime
35 functions
36 L3 Module: l3candidates 2016/03/25 v6456 L3 Experimental additions to
37 l3kernel
38 \l_box_top_dim=\dimen177
39 \l_box_bottom_dim=\dimen178
40 \l_box_left_dim=\dimen179
41 \l_box_right_dim=\dimen180
42 \l_box_top_new_dim=\dimen181
43 \l_box_bottom_new_dim=\dimen182
44 \l_box_left_new_dim=\dimen183
45 \l_box_right_new_dim=\dimen184
46 \l_box_internal_box=\box53
47 \l_coffin_bounding_shift_dim=\dimen185
48 \l_coffin_left_corner_dim=\dimen186
49 \l_coffin_right_corner_dim=\dimen187
50 \l_coffin_bottom_corner_dim=\dimen188
51 \l_coffin_top_corner_dim=\dimen189
52 \l_coffin_scaled_total_height_dim=\dimen190
53 \l_coffin_scaled_width_dim=\dimen191
54 L3 Module: l3luatex 2016/03/26 v6465 L3 Experimental LuaTeX-specific
55 functions
56 ) (c:/TeXLive/2015/texmf-dist/tex/latex/l3kernel/l3pdfmode.def
57 File: l3pdfmode.def 2016/03/26 v6465 L3 Experimental driver: PDF mode
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1
2
3
4 \l__driver_color_stack_int=\count173
5 ))
6 Package: breqn 2015/08/11 v0.98d Breaking equations
7 (c:/TeXLive/2015/texmf-dist/tex/latex/breqn/flexisym.sty
8 Package: flexisym 2015/08/11 v0.98d Make math characters macros
9 LaTeX Info: Redefining \textprime on input line 299.
10 LaTeX Info: Redefining \not on input line 357.
11 (c:/TeXLive/2015/texmf-dist/tex/latex/breqn/cmbase.sym
12 File: cmbase.sym 2007/12/19 v0.92
13 LaTeX Info: Redefining \hbar on input line 324.
14 LaTeX Info: Redefining \surd on input line 326.
15 LaTeX Info: Redefining \angle on input line 334.
16 LaTeX Info: Redefining \neq on input line 335.
17 LaTeX Info: Redefining \mapsto on input line 336.
18 LaTeX Info: Redefining \cong on input line 337.
19 LaTeX Info: Redefining \notin on input line 340.
20 LaTeX Info: Redefining \rightleftharpoons on input line 341.
21 LaTeX Info: Redefining \doteq on input line 342.
22 LaTeX Info: Redefining \hookrightarrow on input line 343.
23 LaTeX Info: Redefining \hookleftarrow on input line 344.
24 LaTeX Info: Redefining \bowtie on input line 345.
25 LaTeX Info: Redefining \models on input line 346.
26 LaTeX Info: Redefining \Longrightarrow on input line 347.
27 LaTeX Info: Redefining \longrightarrow on input line 348.
28 LaTeX Info: Redefining \Longleftarrow on input line 349.
29 LaTeX Info: Redefining \longleftarrow on input line 350.
30 LaTeX Info: Redefining \longmapsto on input line 351.
31 LaTeX Info: Redefining \longleftarrow\rightarrow on input line 352.
32 LaTeX Info: Redefining \Longleftarrow\rightarrow on input line 353.
33 LaTeX Info: Redefining \cdots on input line 357.
34 LaTeX Info: Redefining \vdots on input line 360.
35 LaTeX Info: Redefining \ddots on input line 365.
36 ) (c:/TeXLive/2015/texmf-dist/tex/latex/breqn/mathstyle.sty
37 Package: mathstyle 2015/08/11 v0.98d Tracking mathstyle implicitly
38 LaTeX Info: Redefining \displaystyle on input line 93.
39 LaTeX Info: Redefining \textstyle on input line 95.
40 LaTeX Info: Redefining \scriptstyle on input line 97.
41 LaTeX Info: Redefining \scriptscriptstyle on input line 99.
42 LaTeX Info: Redefining \genfrac on input line 145.
43 ))
44 \inf@bad=\count174
45 \maxint=\count175
46 \listwidth=\dimen192
47 \eqnumsep=\dimen193
48 \eqmargin=\dimen194
49 \eqlinespacing=\skip69
50 \eqlineskip=\skip70
51 \eqlineskiplimit=\dimen195
52 \eqbinoffset=\muskip18
53 \eqdelimoffset=\muskip19
54 \eqindentstep=\dimen196
55 \eqstyle=\toks31
56 \eqbreakdepth=\count176
57 \eqinterlinepenalty=\count177
58
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1  
2  
3  
4     \intereqpenalty=\count178  
5     \intereqskip=\skip71  
6     \prerelpenalty=\count179  
7     \prebinoppenalty=\count180  
8     \Dmedmuskip=\muskip20  
9     \Dthickmuskip=\muskip21  
10    \eqleftskip=\skip72  
11    \eqrightskip=\skip73  
12    \eq@vspan=\skip74  
13    \eq@binoffset=\muskip22  
14    \EQ@box=\box54  
15    \EQ@copy=\box55  
16    \EQ@numbox=\box56  
17    \eq@wdNum=\dimen197  
18    \GRP@numbox=\box57  
19    \grp@wdNum=\dimen198  
20    \eq@lines=\count181  
21    \eq@curline=\count182  
22    \eq@badness=\count183  
23    \EQ@vims=\count184  
24    \eq@dp=\dimen199  
25    \eq@wdL=\dimen256  
26    \eq@wdT=\dimen257  
27    \eq@wdMin=\dimen258  
28    \grp@wdL=\dimen259  
29    \grp@wdR=\dimen260  
30    \grp@wdT=\dimen261  
31    \eq@wdRmax=\dimen262  
32    \eq@firstht=\dimen263  
33    \eq@wdCond=\dimen264  
34    \eq@indentstep=\dimen265  
35    \eq@linewidth=\dimen266  
36    \grp@linewidth=\dimen267  
37    \eq@hshift=\dimen268  
38    \eq@given@sidespace=\dimen269  
39    \eq@final@linecount=\count185  
40    \eq@wdR=\dimen270  
41    \EQ@continue=\toks32  
42    \lr@level=\count186  
43    \GRP@queue=\toks33  
44    \GRP@box=\box58  
45    \GRP@wholebox=\box59  
46    \darraycolsep=\skip75  
47    \cur@row=\count187  
48    \cur@col=\count188  
49    \conditionsep=\skip76  
50 ) (c:/TeXLive/2015/texmf-dist/tex/latex/footmisc/footmisc.sty  
51 Package: footmisc 2011/06/06 v5.5b a miscellany of footnote facilities  
52 \FN@temptoken=\toks34  
53 \footnotemargin=\dimen271  
54 \c@pp@next@reset=\count189  
55 Package footmisc Info: Declaring symbol style bringhurst on input line  
56 855.  
57 Package footmisc Info: Declaring symbol style chicago on input line 863.  
58  
59  
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64  
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```

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1
2
3
4 Package footmisc Info: Declaring symbol style wiley on input line 872.
5 Package footmisc Info: Declaring symbol style lamport-robust on input
6 line 883.
7
8 Package footmisc Info: Declaring symbol style lamport* on input line 903.
9 Package footmisc Info: Declaring symbol style lamport*-robust on input
10 line 924
11 .
12 ) ./gopinathargallauro2017.aux)
13 \openout1 = `gopinathargallauro2017.aux'.
14
15 LaTeX Font Info:     Checking defaults for OML/cmm/m/it on input line 90.
16 LaTeX Font Info:     ... okay on input line 90.
17 LaTeX Font Info:     Checking defaults for T1/cmr/m/n on input line 90.
18 LaTeX Font Info:     ... okay on input line 90.
19 LaTeX Font Info:     Checking defaults for OT1/cmr/m/n on input line 90.
20 LaTeX Font Info:     ... okay on input line 90.
21 LaTeX Font Info:     Checking defaults for OMS/cmsy/m/n on input line 90.
22 LaTeX Font Info:     ... okay on input line 90.
23 LaTeX Font Info:     Checking defaults for OMX/cmex/m/n on input line 90.
24 LaTeX Font Info:     ... okay on input line 90.
25 LaTeX Font Info:     Checking defaults for U/cmr/m/n on input line 90.
26 LaTeX Font Info:     ... okay on input line 90.
27 LaTeX Font Info:     Checking defaults for TS1/cmr/m/n on input line 90.
28 LaTeX Font Info:     ... okay on input line 90.
29 LaTeX Font Info:     Checking defaults for PD1/pdf/m/n on input line 90.
30 LaTeX Font Info:     ... okay on input line 90.
31 LaTeX Font Info:     (c:/TeXLive/2015/texmf-dist/tex/context/base/supp-pdf.mkii
32 [Loading MPS to PDF converter (version 2006.09.02).]
33 \scratchcounter=\count190
34 \scratchdimen=\dimen272
35 \scratchbox=\box60
36 \nofMPsegments=\count191
37 \nofMParguments=\count192
38 \everyMPshowfont=\toks35
39 \MPscratchCnt=\count193
40 \MPscratchDim=\dimen273
41 \MPnumerator=\count194
42 \makeMPintoPDFobject=\count195
43 \everyMPtoPDFconversion=\toks36
44 ) (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/epstopdf-base.sty
45 Package: epstopdf-base 2010/02/09 v2.5 Base part for package epstopdf
46 (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/grfext.sty
47 Package: grfext 2010/08/19 v1.1 Manage graphics extensions (HO)
48 )
49 Package grfext Info: Graphics extension search list:
50 (grfext)
51 [.png,.pdf,.jpg,.mps,.jpeg,.jbig2,.jb2,.PNG,.PDF,.JPG,.JPE
52 G,.JBIG2,.JB2,.eps]
53 (grfext)          \AppendGraphicsExtensions on input line 452.
54 (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/epstopdf-sys.cfg
55 File: epstopdf-sys.cfg 2010/07/13 v1.3 Configuration of (r)epstopdf for
56 TeX Liv
57 e
58
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64
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```

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1
2
3
4    ))
5 \AtBeginShipoutBox=\box61
6 Package hyperref Info: Link coloring OFF on input line 90.
7 (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/nameref.sty
8 Package: nameref 2012/10/27 v2.43 Cross-referencing by name of section
9 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/gettitlestring.sty
10 Package: gettitlestring 2010/12/03 v1.4 Cleanup title references (HO)
11 )
12 \c@section@level=\count196
13 )
14 LaTeX Info: Redefining \ref on input line 90.
15 LaTeX Info: Redefining \pageref on input line 90.
16 LaTeX Info: Redefining \nameref on input line 90.
17 (./gopinathargallauro2017.out) (./gopinathargallauro2017.out)
18 \@outlinefile=\write3
19 \openout3 = `gopinathargallauro2017.out'.
20
21 LaTeX Info: Redefining \microtypecontext on input line 90.
22 Package microtype Info: Generating PDF output.
23 Package microtype Info: Character protrusion enabled (level 2).
24 Package microtype Info: Using default protrusion set `alltext'.
25 Package microtype Info: Automatic font expansion enabled (level 2),
26 (microtype) stretch: 20, shrink: 20, step: 1, non-selected.
27 Package microtype Info: Using default expansion set `basictext'.
28 Package microtype Info: No adjustment of tracking.
29 Package microtype Info: No adjustment of interword spacing.
30 Package microtype Info: No adjustment of character kerning.
31 (c:/TeXLive/2015/texmf-dist/tex/latex/microtype/mt-cmr.cfg
32 File: mt-cmr.cfg 2013/05/19 v2.2 microtype config. file: Computer Modern
33 Roman
34 (RS)
35 )
36 LaTeX Font Info: Try loading font information for U+msa on input line
37 127.
38 (c:/TeXLive/2015/texmf-dist/tex/latex/amsfonts/umsa.fd
39 File: umsa.fd 2013/01/14 v3.01 AMS symbols A
40 ) (c:/TeXLive/2015/texmf-dist/tex/latex/microtype/mt-msa.cfg
41 File: mt-msa.cfg 2006/02/04 v1.1 microtype config. file: AMS symbols (a)
42 (RS)
43 )
44 LaTeX Font Info: Try loading font information for U+msb on input line
45 127.
46 (c:/TeXLive/2015/texmf-dist/tex/latex/amsfonts/umsb.fd
47 File: umsb.fd 2013/01/14 v3.01 AMS symbols B
48 ) (c:/TeXLive/2015/texmf-dist/tex/latex/microtype/mt-msb.cfg
49 File: mt-msb.cfg 2005/06/01 v1.0 microtype config. file: AMS symbols (b)
50 (RS)
51 )
52 LaTeX Font Info: Font shape `U/lasy/b/n' in size <7> not available
53 (Font)                      Font shape `U/lasy/m/n' tried instead on input line
54 127.
55 LaTeX Font Info: Font shape `U/lasy/b/n' in size <5> not available
56 (Font)                      Font shape `U/lasy/m/n' tried instead on input line
57 127.
58
59
60
61
62
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64
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```

```
1
2
3
4    LaTeX Font Info:     Calculating math sizes for size <8.5> on input line
5    127.
6
7    Package natbib Warning: Citation `laplante1992assistive' on page 1
8    undefined on
9        input line 141.
10
11
12    Package natbib Warning: Citation `scherer1996outcomes' on page 1
13    undefined on i
14        nput line 141.
15
16
17    Package natbib Warning: Citation `huete2012personal' on page 1 undefined
18    on inp
19        ut line 141.
20
21
22    Package natbib Warning: Citation `simpson2008tooth' on page 1 undefined
23    on inpu
24        t line 143.
25
26
27
28    Package natbib Warning: Citation `nuttin2002selection' on page 1
29    undefined on i
30        nput line 143.
31
32
33    LaTeX Warning: File `./finalfigures/Fig1.eps' not found on input line
34    146.
35
36    Package epstopdf Info: Source file: <./finalfigures/Fig1.eps>
37        (epstopdf)           Output file: <./finalfigures/Fig1-eps-converted-
38        to.pdf>
39        (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig1-
40        eps-co
41        nverted-to.pdf ./finalfigures/Fig1.eps>
42        (epstopdf)           \includegraphics on input line 146.
43        Package epstopdf Info: Output file is already up-to-date.
44
45
46    ! Package pdftex.def Error: File `./finalfigures/Fig1-eps-converted-
47        to.pdf' not
48        found.
49
50
51    See the pdftex.def package documentation for explanation.
52    Type H <return> for immediate help.
53        ...
54
55    l.146 ...xwidth, center]{./finalfigures/Fig1.eps}
56
57    Using draft setting for this image.
58    Try typing <return> to proceed.
59    If that doesn't work, type X <return> to quit.
60
61
62
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64
65
```

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1
2
3
4 Package microtype Info: Loading generic settings for font family
5 (microtype)           `cmtt' (encoding: OT1).
6 (microtype)           For optimal results, create family-specific
7 settings.
8 (microtype)           See the microtype manual for details.
9 LaTeX Font Info:     Font shape `U/lasy/b/n' in size <8.5> not available
10 (Font)                Font shape `U/lasy/m/n' tried instead on input line
11 147.
12 LaTeX Font Info:     Font shape `U/lasy/b/n' in size <5.94997> not
13 available
14 (Font)                Font shape `U/lasy/m/n' tried instead on input line
15 147.
16 LaTeX Font Info:     Font shape `U/lasy/b/n' in size <4.25> not available
17 (Font)                Font shape `U/lasy/m/n' tried instead on input line
18 147.
19
20
21 Package natbib Warning: Citation `eftring1999technical' on page 1
22 undefined on
23 input line 150.
24
25 [1{c:/TeXLive/2015/texmf-var/fonts/map/pdftex/updmap/pdftex.map}
26
27
28 ]
29
30
31 Package natbib Warning: Citation `gopinath2017mode' on page 2 undefined
32 on inpu
33 t line 156.
34
35
36 LaTeX Warning: File `./finalfigures/Fig2.eps' not found on input line
37 164.
38
39 Package epstopdf Info: Source file: <./finalfigures/Fig2.eps>
40 (epstopdf)           Output file: <./finalfigures/Fig2-eps-converted-
41 to.pdf>
42 (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig2-
43 eps-co
44 nverted-to.pdf ./finalfigures/Fig2.eps>
45 (epstopdf)           \includegraphics on input line 164.
46 Package epstopdf Info: Output file is already uptodate.
47
48 ! Package pdftex.def Error: File `./finalfigures/Fig2-eps-converted-
49 to.pdf' not
50   found.
51
52 See the pdftex.def package documentation for explanation.
53 Type H <return> for immediate help.
54 ...
55
56 1.164 ...=0.35\textwidth]{./finalfigures/Fig2.eps}
57
58 Using draft setting for this image.
59 Try typing <return> to proceed.
60
61
62
63
64
65
```

1  
2  
3  
4 If that doesn't work, type X <return> to quit.  
5  
6  
7 Package natbib Warning: Citation `philips2007adaptive' on page 2  
8 undefined on i  
9 nput line 180.  
10  
11  
12 Package natbib Warning: Citation `demeester2008user' on page 2 undefined  
13 on inp  
14 ut line 180.  
15  
16  
17 Package natbib Warning: Citation `gopinath2017human' on page 2 undefined  
18 on inp  
19 ut line 180.  
20  
21  
22 Package natbib Warning: Citation `muelling2017autonomy' on page 2  
23 undefined on  
24 input line 180.  
25  
26  
27 Package natbib Warning: Citation `tsui2011want' on page 2 undefined on  
28 input li  
29 ne 180.  
30  
31  
32 Package natbib Warning: Citation `kim2010relationship' on page 2  
33 undefined on i  
34 nput line 180.  
35  
36  
37  
38 Package natbib Warning: Citation `kim2012autonomy' on page 2 undefined on  
39 input  
40 line 180.  
41  
42  
43 Package natbib Warning: Citation `driessen2005collaborative' on page 2  
44 undefined  
45 d on input line 180.  
46  
47  
48  
49 Package natbib Warning: Citation `downey2016blending' on page 2 undefined  
50 on in  
51 put line 180.  
52  
53  
54 Package natbib Warning: Citation `storms2014blending' on page 2 undefined  
55 on in  
56 put line 180.  
57  
58  
59  
60  
61  
62  
63  
64  
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1  
2  
3  
4 Package natbib Warning: Citation `muelling2017autonomy' on page 2  
5 undefined on  
6 input line 180.  
7  
8 [2]  
9  
10 Package natbib Warning: Citation `herlant2016assistive' on page 3  
11 undefined on  
12 input line 182.  
13  
14  
15 Package natbib Warning: Citation `pilarski2012dynamic' on page 3  
16 undefined on i  
17 nput line 182.  
18  
19  
20 Package natbib Warning: Citation `liu2016goal' on page 3 undefined on  
21 input lin  
22 e 184.  
23  
24  
25  
26 Package natbib Warning: Citation `choi2008laser' on page 3 undefined on  
27 input l  
28 ine 184.  
29  
30  
31 Package natbib Warning: Citation `baker2007goal' on page 3 undefined on  
32 input l  
33 ine 184.  
34  
35  
36 Package natbib Warning: Citation `baker2009action' on page 3 undefined on  
37 input  
38 line 184.  
39  
40  
41 Package natbib Warning: Citation `taha2011pomdp' on page 3 undefined on  
42 input l  
43 ine 184.  
44  
45  
46 Package natbib Warning: Citation `dragan2012assistive' on page 3  
47 undefined on i  
48 nput line 184.  
49  
50  
51  
52 Package natbib Warning: Citation `gopinath2017human' on page 3 undefined  
53 on inp  
54 ut line 184.  
55  
56  
57 Underfull \vbox (badness 10000) has occurred while \output is active []  
58  
59  
60  
61  
62  
63  
64  
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1  
2  
3  
4 Underfull \vbox (badness 10000) has occurred while \output is active []  
5  
6 [3]  
7  
8 Package natbib Warning: Citation `sadigh2016information' on page 4  
9 undefined on  
10 input line 187.  
11  
12  
13 Package natbib Warning: Citation `sadigh2016planning' on page 4 undefined  
14 on in  
15 put line 187.  
16  
17  
18 Package natbib Warning: Citation `atanasov2014information' on page 4  
19 undefined  
20 on input line 187.  
21  
22  
23 Package natbib Warning: Citation `miller2016ergodic' on page 4 undefined  
24 on inp  
25 ut line 188.  
26  
27  
28  
29 Package natbib Warning: Citation `miller2013trajectory' on page 4  
30 undefined on  
31 input line 188.  
32  
33  
34 Underfull \vbox (badness 7012) has occurred while \output is active []  
35  
36  
37 Package natbib Warning: Citation `tomasello2007shared' on page 4  
38 undefined on i  
39 nput line 190.  
40  
41  
42 Package natbib Warning: Citation `tomasello2010gap' on page 4 undefined  
43 on inpu  
44 t line 190.  
45  
46  
47 Package natbib Warning: Citation `sorokin2010people' on page 4 undefined  
48 on inp  
49 ut line 190.  
50  
51  
52 Package natbib Warning: Citation `goodfellow2010help' on page 4 undefined  
53 on in  
54 put line 190.  
55  
56  
57 Package natbib Warning: Citation `dragan2013legibility' on page 4  
58 undefined on  
59  
60  
61  
62  
63  
64  
65

```
1  
2  
3  
4     input line 190.  
5  
6  
7     Package natbib Warning: Citation `holladay2014legible' on page 4  
8     undefined on i  
9     nput line 190.  
10  
11  
12     Package natbib Warning: Citation `gopinath2017mode' on page 4 undefined  
13     on inpu  
14     t line 190.  
15  
16     [4]  
17  
18     Package natbib Warning: Citation `kelley2008understanding' on page 5  
19     undefined  
20     on input line 212.  
21  
22  
23  
24     Package natbib Warning: Citation `wang2013probabilistic' on page 5  
25     undefined on  
26     input line 212.  
27  
28  
29     LaTeX Warning: File `./finalfigures/Fig3.eps' not found on input line  
30     216.  
31  
32     Package epstopdf Info: Source file: <./finalfigures/Fig3.eps>  
33     (epstopdf)           Output file: <./finalfigures/Fig3-eps-converted-  
34     to.pdf>  
35     (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig3-  
36     eps-co  
37     nverted-to.pdf ./finalfigures/Fig3.eps>  
38     (epstopdf)           \includegraphics on input line 216.  
39     Package epstopdf Info: Output file is already uptodate.  
40  
41     ! Package pdftex.def Error: File `./finalfigures/Fig3-eps-converted-  
42     to.pdf' not  
43     found.  
44  
45  
46     See the pdftex.def package documentation for explanation.  
47     Type H <return> for immediate help.  
48     ...  
49  
50     1.216 ...width = 1\hsize]{./finalfigures/Fig3.eps}  
51  
52     Using draft setting for this image.  
53     Try typing <return> to proceed.  
54     If that doesn't work, type X <return> to quit.  
55  
56  
57  
58     LaTeX Warning: `h' float specifier changed to `ht'.  
59  
60  
61  
62  
63  
64  
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```

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1
2
3
4 Package hyperref Info: bookmark level for unknown algorithm defaults to 0
5 on in
6 put line 233.
7 [5]
8
9 LaTeX Warning: File `./finalfigures/Fig4.eps' not found on input line
10 288.
11
12 Package epstopdf Info: Source file: <./finalfigures/Fig4.eps>
13 (epstopdf)          Output file: <./finalfigures/Fig4-eps-converted-
14 to.pdf>
15 (epstopdf)          Command: <repstopdf --outfile=./finalfigures/Fig4-
16 eps-co
17 nverted-to.pdf ./finalfigures/Fig4.eps>
18 (epstopdf)          \includegraphics on input line 288.
19 Package epstopdf Info: Output file is already uptodate.
20
21 ! Package pdftex.def Error: File `./finalfigures/Fig4-eps-converted-
22 to.pdf' not
23 found.
24
25 See the pdftex.def package documentation for explanation.
26 Type H <return> for immediate help.
27 ...
28
29
30 1.288 ...5\vsiz{, center]{./finalfigures/Fig4.eps}
31
32 Using draft setting for this image.
33 Try typing <return> to proceed.
34 If that doesn't work, type X <return> to quit.
35
36
37 Package natbib Warning: Citation `gopinath2017mode' on page 6 undefined
38 on inpu
39 t line 289.
40
41
42 Package natbib Warning: Citation `gopinath2017mode' on page 6 undefined
43 on inpu
44 t line 289.
45
46
47 [6]
48
49 Package natbib Warning: Citation `gopinath2017mode' on page 7 undefined
50 on inpu
51 t line 324.
52
53
54 [7]
55
56 Package natbib Warning: Citation `schoner2015dynamic' on page 8 undefined
57 on in
58 put line 333.
59
60
61
62
63
64
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```

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1  
2  
3  
4 Package natbib Warning: Citation `amari1977dynamics' on page 8 undefined  
5 on inp  
6 ut line 336.  
7  
8  
9 Package natbib Warning: Citation `wilson1973mathematical' on page 8  
10 undefined o  
11 n input line 341.  
12  
13  
14 Package natbib Warning: Citation `schoner2008dynamical' on page 8  
15 undefined on  
16 input line 343.  
17  
18  
19 Package natbib Warning: Citation `erlhagen2006dynamic' on page 8  
20 undefined on i  
21 nput line 344.  
22  
23  
24 Package natbib Warning: Citation `erlhagen2014dynamic' on page 8  
25 undefined on i  
26 nput line 344.  
27  
28  
29  
30 Package natbib Warning: Citation `zibner2011dynamic' on page 8 undefined  
31 on inp  
32 ut line 344.  
33  
34  
35 Package natbib Warning: Citation `schoner1995dynamics' on page 8 undefined  
36 on i  
37 nput line 344.  
38  
39  
40 Package natbib Warning: Citation `faubel2008learning' on page 8 undefined  
41 on in  
42 put line 344.  
43  
44 LaTeX Font Info: Try loading font information for U+bbm on input line  
45 358.  
46 (c:/TeXLive/2015/texmf-dist/tex/latex/bbm-macros/ubbm.fd  
47 File: ubbm.fd 1999/03/15 V 1.2 Font definition for bbm font - TH  
48 ) [8]  
49  
50  
51 Package natbib Warning: Citation `argall2009survey' on page 9 undefined  
52 on inpu  
53 t line 381.  
54  
55  
56 Package natbib Warning: Citation `schaal1997learning' on page 9 undefined  
57 on in  
58 put line 381.  
59  
60  
61  
62  
63  
64  
65
```

```
1
2
3
4
5 Package natbib Warning: Citation `hsu2002randomized' on page 9 undefined
6 on inpu
7 ut line 381.
8
9
10 Package natbib Warning: Citation `ratliff2009chomp' on page 9 undefined
11 on inpu
12 t line 381.
13
14
15 Package natbib Warning: Citation `rimon1992exact' on page 9 undefined on
16 input
17 line 381.
18
19
20 Package natbib Warning: Citation `tanner2003nonholonomic' on page 9
21 undefined o
22 n input line 381.
23
24
25
26 LaTeX Font Warning: Font shape `U/bbm/m/n' in size <8.5> not available
27 (Font)           size <8> substituted on input line 396.
28
29
30 LaTeX Font Warning: Font shape `U/bbm/m/n' in size <4.25> not available
31 (Font)           size <5> substituted on input line 396.
32
33
34 Package natbib Warning: Citation `khatib1986real' on page 9 undefined on
35 input
36 line 398.
37
38
39
40 LaTeX Warning: File `./finalfigures/Fig5.eps' not found on input line
41 413.
42
43 Package epstopdf Info: Source file: <./finalfigures/Fig5.eps>
44 (epstopdf)           Output file: <./finalfigures/Fig5-eps-converted-
45 to.pdf>
46 (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig5-
47 eps-co
48 nverted-to.pdf ./finalfigures/Fig5.eps>
49 (epstopdf)           \includegraphics on input line 413.
50 Package epstopdf Info: Output file is already up-to-date.
51
52 ! Package pdftex.def Error: File `./finalfigures/Fig5-eps-converted-
53 to.pdf' not
54     found.
55
56 See the pdftex.def package documentation for explanation.
57 Type H <return> for immediate help.
58 ...
59
60
61
62
63
64
65
```

```
1  
2  
3  
4     1.413 ...ht = 0.14\vsiz] {./finalfigures/Fig5.eps}  
5  
6     Using draft setting for this image.  
7     Try typing <return> to proceed.  
8     If that doesn't work, type X <return> to quit.  
9  
10  
11     LaTeX Warning: File `./finalfigures/Fig6.eps' not found on input line  
12     419.  
13  
14     Package epstopdf Info: Source file: <./finalfigures/Fig6.eps>  
15     (epstopdf)           Output file: <./finalfigures/Fig6-eps-converted-  
16     to.pdf>  
17     (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig6-  
18     eps-co  
19     nverted-to.pdf ./finalfigures/Fig6.eps>  
20     (epstopdf)           \includegraphics on input line 419.  
21     Package epstopdf Info: Output file is already uptodate.  
22  
23  
24     ! Package pdftex.def Error: File `./finalfigures/Fig6-eps-converted-  
25     to.pdf' not  
26     found.  
27  
28     See the pdftex.def package documentation for explanation.  
29     Type H <return> for immediate help.  
30     ...  
31  
32     1.419 ...h = \textwidth ] {./finalfigures/Fig6.eps}  
33  
34  
35     Using draft setting for this image.  
36     Try typing <return> to proceed.  
37     If that doesn't work, type X <return> to quit.  
38  
39     [9] [10]  
40  
41     LaTeX Warning: File `./finalfigures/Fig7.eps' not found on input line  
42     452.  
43  
44     Package epstopdf Info: Source file: <./finalfigures/Fig7.eps>  
45     (epstopdf)           Output file: <./finalfigures/Fig7-eps-converted-  
46     to.pdf>  
47     (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig7-  
48     eps-co  
49     nverted-to.pdf ./finalfigures/Fig7.eps>  
50     (epstopdf)           \includegraphics on input line 452.  
51     Package epstopdf Info: Output file is already uptodate.  
52  
53  
54     ! Package pdftex.def Error: File `./finalfigures/Fig7-eps-converted-  
55     to.pdf' not  
56     found.  
57  
58     See the pdftex.def package documentation for explanation.  
59     Type H <return> for immediate help.  
60     ...  
61  
62  
63  
64  
65
```

```
1  
2  
3  
4  
5 1.452 ...1\hsize ,center]{./finalfigures/Fig7.eps}  
6  
7 Using draft setting for this image.  
8 Try typing <return> to proceed.  
9 If that doesn't work, type X <return> to quit.  
10  
11  
12 Overfull \hbox (1.40538pt too wide) in paragraph at lines 462--463  
13 $[]$OT1/cmr/m/n/10 (-20) : In the sec-ond phase of train-ing, the  
14 blending-  
15 []  
16  
17  
18 LaTeX Warning: File `./finalfigures/Fig8.eps' not found on input line  
19 486.  
20  
21 Package epstopdf Info: Source file: <./finalfigures/Fig8.eps>  
22 (epstopdf) Output file: <./finalfigures/Fig8-eps-converted-  
23 to.pdf>  
24 (epstopdf) Command: <repstopdf --outfile=./finalfigures/Fig8-  
25 eps-co  
26 nverted-to.pdf ./finalfigures/Fig8.eps>  
27 (epstopdf) \includegraphics on input line 486.  
28 Package epstopdf Info: Output file is already uptodate.  
29  
30 ! Package pdftex.def Error: File `./finalfigures/Fig8-eps-converted-  
31 to.pdf' not  
32 found.  
33  
34 See the pdftex.def package documentation for explanation.  
35 Type H <return> for immediate help.  
36 ...  
37  
38 1.486 ...twidth, ,center]{./finalfigures/Fig8.eps}  
39  
40 Using draft setting for this image.  
41 Try typing <return> to proceed.  
42 If that doesn't work, type X <return> to quit.  
43  
44 Underfull \vbox (badness 1194) has occurred while \output is active []  
45  
46 [11]  
47 Underfull \vbox (badness 10000) has occurred while \output is active []  
48  
49 [12]  
50  
51 LaTeX Warning: File `./finalfigures/Fig9.eps' not found on input line  
52 520.  
53  
54 Package epstopdf Info: Source file: <./finalfigures/Fig9.eps>  
55 (epstopdf) Output file: <./finalfigures/Fig9-eps-converted-  
56 to.pdf>  
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4 (epstopdf)           Command: <repstopdf --outfile=./finalfigures/Fig9-  
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6 nverted-to.pdf ./finalfigures/Fig9.eps>  
7 (epstopdf)           \includegraphics on input line 520.  
8 Package epstopdf Info: Output file is already up-to-date.  
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10 ! Package pdftex.def Error: File `./finalfigures/Fig9-eps-converted-  
11 to.pdf' not  
12     found.  
13  
14 See the pdftex.def package documentation for explanation.  
15 Type H <return> for immediate help.  
16     ...  
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18 1.520 ... \hsize, ,center] {./finalfigures/Fig9.eps}  
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20 Using draft setting for this image.  
21 Try typing <return> to proceed.  
22 If that doesn't work, type X <return> to quit.  
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25 Underfull \vbox (badness 10000) has occurred while \output is active []  
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30 LaTeX Warning: File `./finalfigures/Fig10.eps' not found on input line  
31 532.  
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33 Package epstopdf Info: Source file: <./finalfigures/Fig10.eps>  
34 (epstopdf)           Output file: <./finalfigures/Fig10-eps-converted-  
35 to.pdf>  
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37 (epstopdf)           Command: <repstopdf --  
38 outfile=./finalfigures/Fig10-eps-c  
39 onverted-to.pdf ./finalfigures/Fig10.eps>  
40 (epstopdf)           \includegraphics on input line 532.  
41 Package epstopdf Info: Output file is already up-to-date.  
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43 ! Package pdftex.def Error: File `./finalfigures/Fig10-eps-converted-  
44 to.pdf' no  
45 t found.  
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47 See the pdftex.def package documentation for explanation.  
48 Type H <return> for immediate help.  
49     ...  
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52 1.532 ... \hsize ,center] {./finalfigures/Fig10.eps}  
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54 Using draft setting for this image.  
55 Try typing <return> to proceed.  
56 If that doesn't work, type X <return> to quit.  
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59 LaTeX Warning: `!h' float specifier changed to `!ht'.  
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5 [14]  
6 No file gopinathargallauro2017.bbl.  
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8 Package natbib Warning: There were undefined citations.  
9  
10 Package atveryend Info: Empty hook `BeforeClearDocument' on input line  
11 619.  
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13 Package balance Warning: You have called \balance in second column  
14 (balance) Columns might not be balanced.  
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16 [15] [16  
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21 Package atveryend Info: Empty hook `AfterLastShipout' on input line 619.  
22 (./gopinathargallauro2017.aux)  
23 Package atveryend Info: Executing hook `AtVeryEndDocument' on input line  
24 619.  
25 Package atveryend Info: Executing hook `AtEndAfterFileList' on input line  
26 619.  
27 Package rerunfilecheck Info: File `gopinathargallauro2017.out' has not  
28 changed.  
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30 (rerunfilecheck) Checksum:  
31 61D474B85B254D3F2207EBEF93E81222;380.  
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34 LaTeX Font Warning: Size substitutions with differences  
35 (Font) up to 0.75pt have occurred.  
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38 LaTeX Warning: Label(s) may have changed. Rerun to get cross-references  
39 right.  
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41 Package atveryend Info: Empty hook `AtVeryVeryEnd' on input line 619.  
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32 18418 strings out of 493027
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35 21439 multiletter control sequences out of 15000+600000
36 24855 words of font info for 169 fonts, out of 8000000 for 9000
37 1141 hyphenation exceptions out of 8191
38 36i,20n,51p,10404b,668s stack positions out of
39 5000i,500n,10000p,200000b,80000s
40 pdfTeX warning (dest): name{
41 Hfootnote.6} has been referenced but does not exist, replaced by a fixed
42 one
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44 pdfTeX warning (dest): name{Hfootnote.5} has been referenced but does not
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8 <c:/Users/asynch/.texlive2015/texmf-
9 var/fonts/pk/ljfour/public/bbm/bbm10.600pk
10><c:/TeXLive/2015/texmf-
11 dist/fonts/type1/public/amsfonts/cm/cmbsy10.pfb><c:/TeX
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36 msfonts/cm/cmr8.pfb><c:/TeXLive/2015/texmf-
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38 cmsy10.pfb><c:/TeXLive/2015/texmf-
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48 dist/fonts/type
49 1/public/amsfonts/cm/cmtt8.pfb><c:/TeXLive/2015/texmf-
50 dist/fonts/type1/public/a
51 msfonts/symbols/msbm10.pfb>
52 Output written on gopinathargallauro2017.pdf (17 pages, 340015 bytes).
53 PDF statistics:
54 323 PDF objects out of 1000 (max. 8388607)
55 277 compressed objects within 3 object streams
56 79 named destinations out of 1000 (max. 500000)
57 14913 words of extra memory for PDF output out of 17280 (max. 10000000)
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Figure1

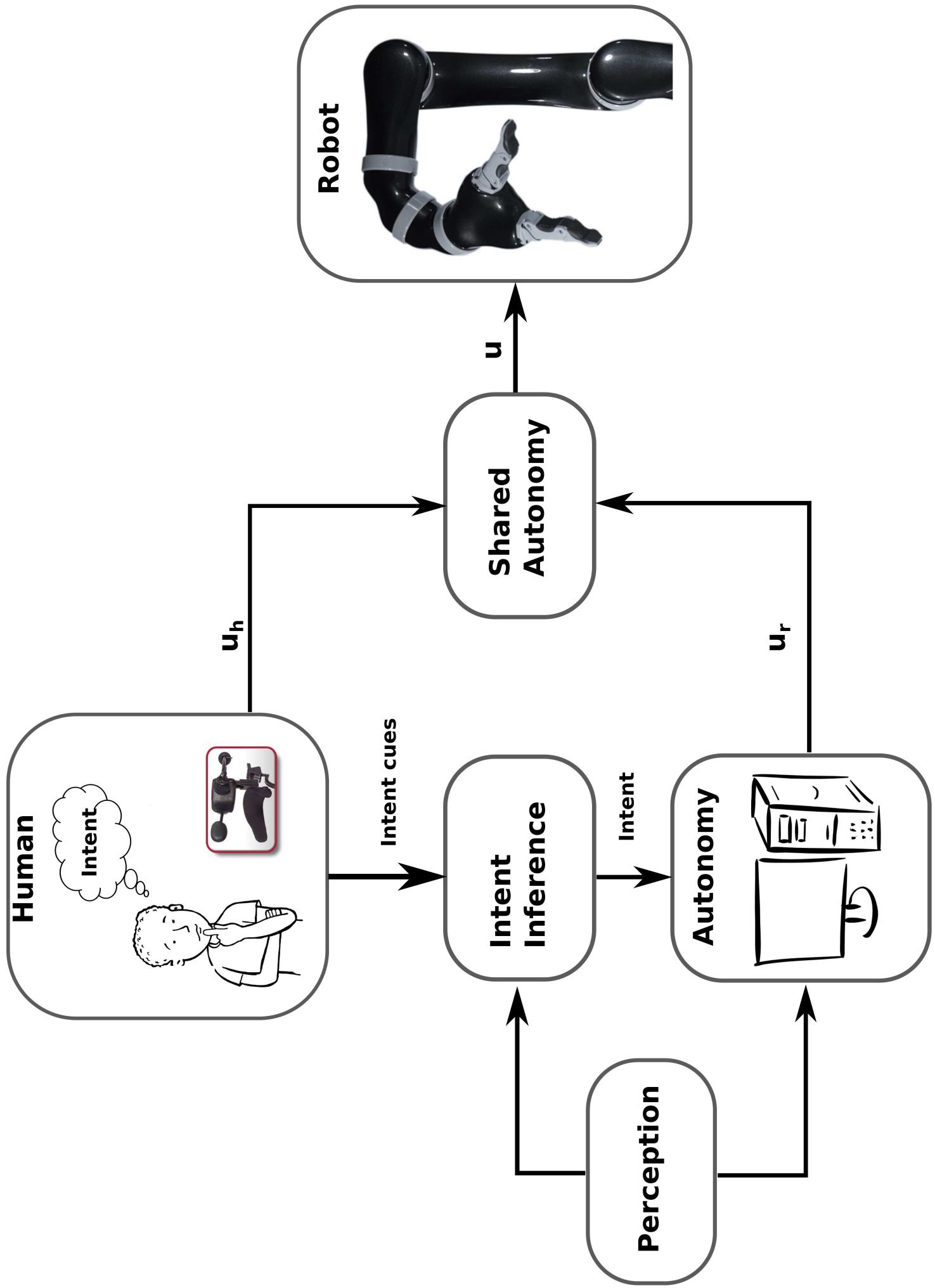
[Click here to download Figure Fig1.eps](#)

Figure2

[Click here to download Figure Fig2.eps](#)

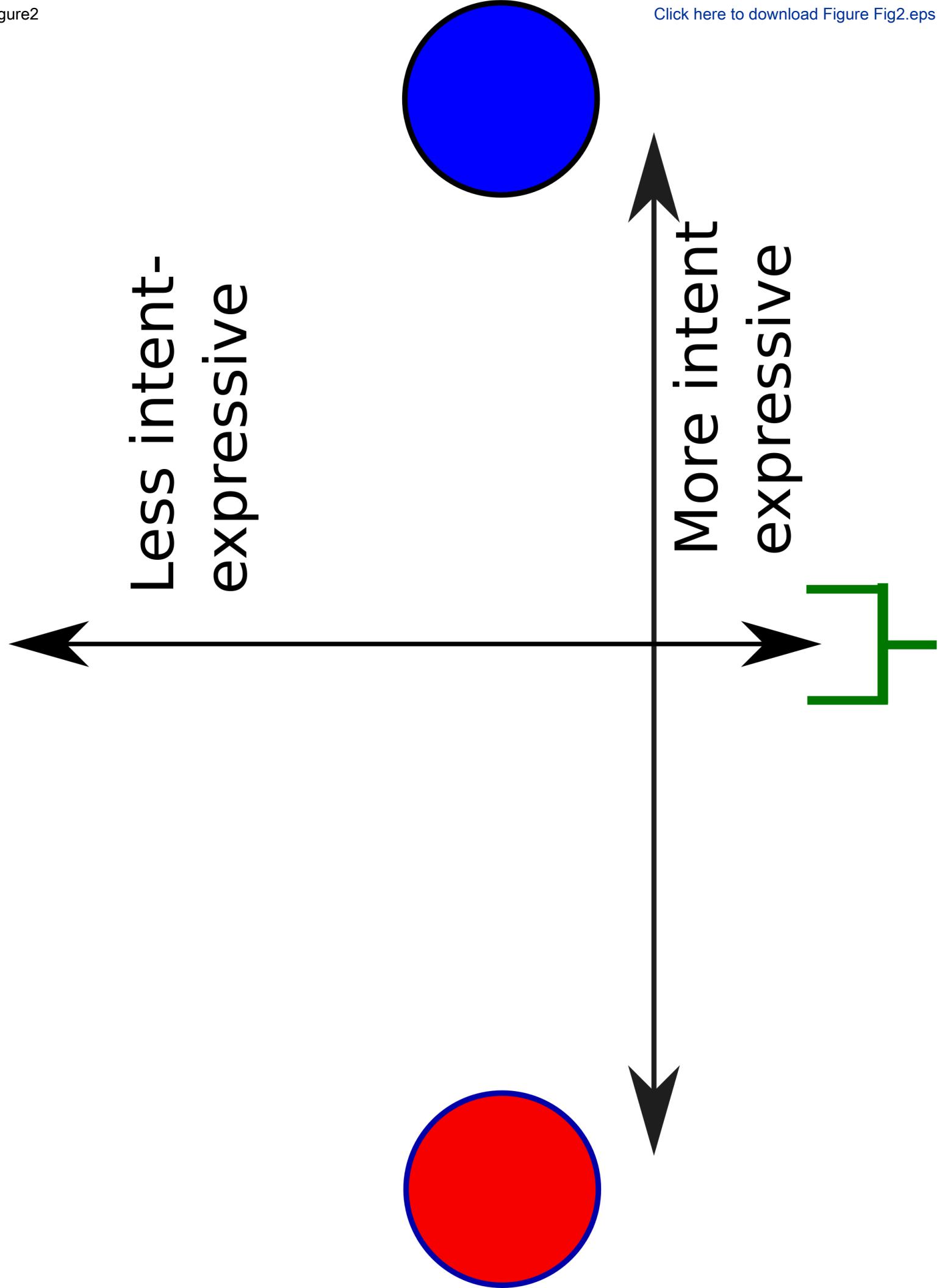
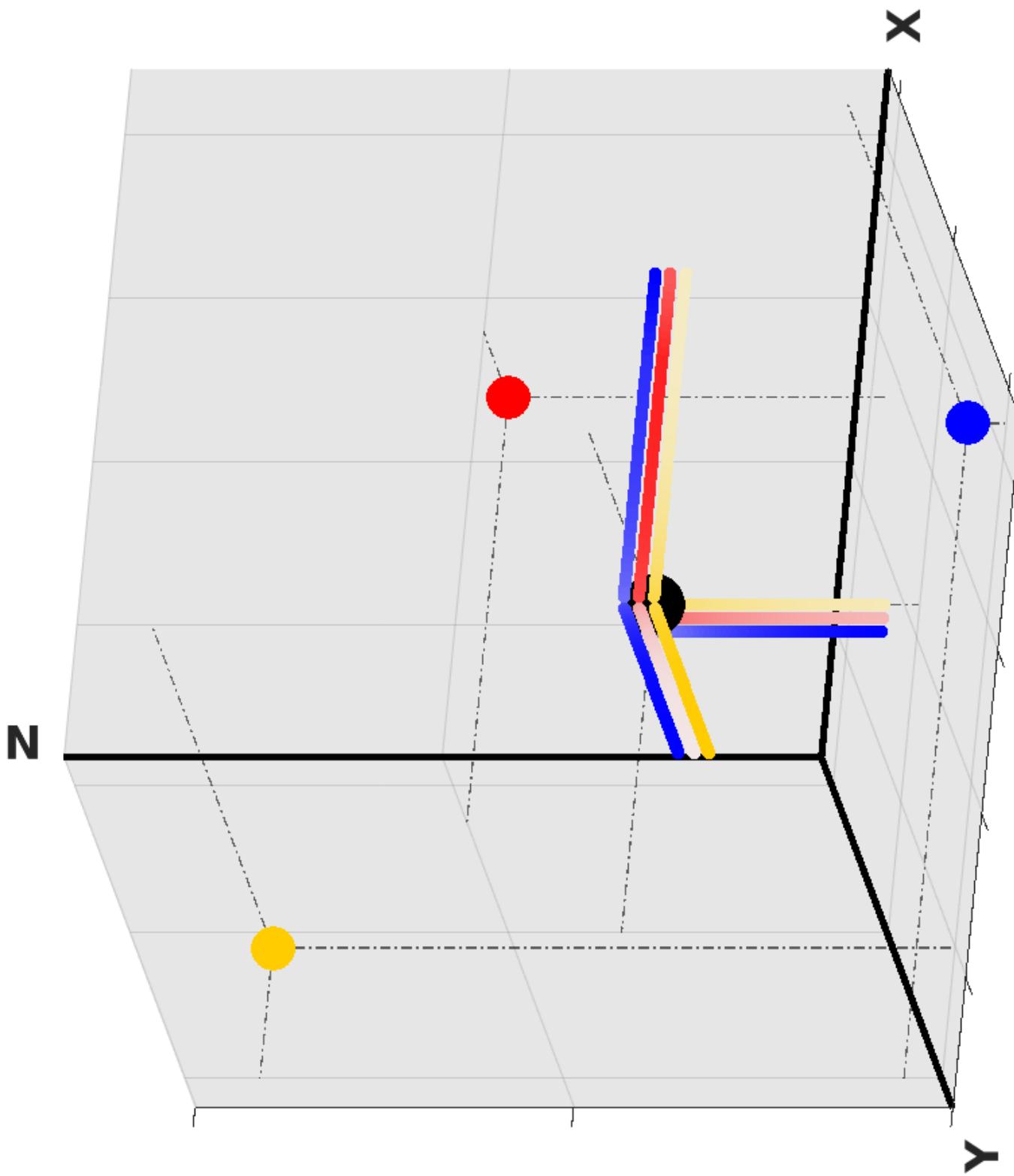
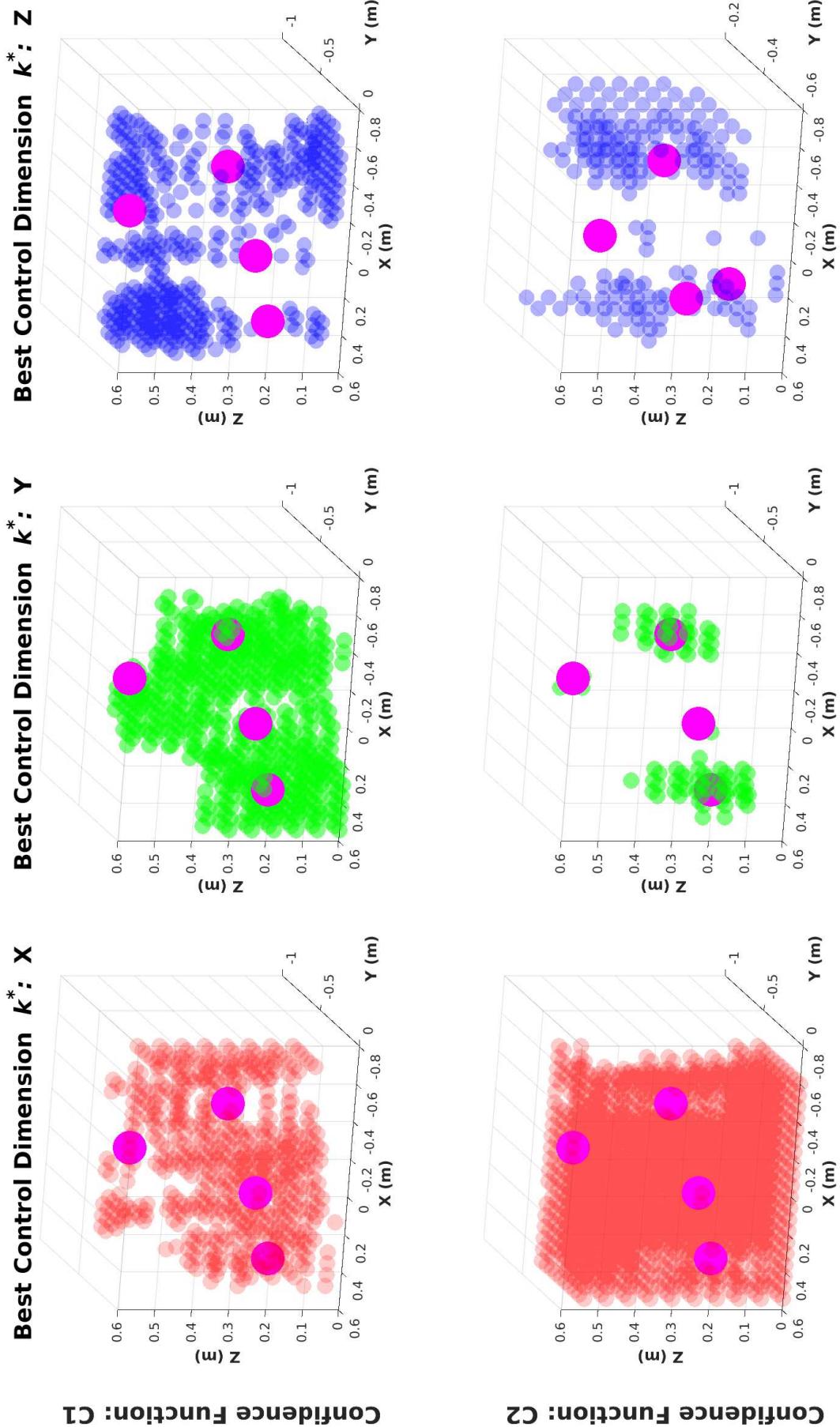


Figure3

[Click here to download Figure Fig3.eps](#)



Control Mappings	
Mode	Head Array
1	$v_x$
2	$v_y$
3	$v_z$
4	$\omega_z$
5	$\omega_y$
6	$\omega_x$



Figure6

[Click here to download Figure Fig6.eps](#) 

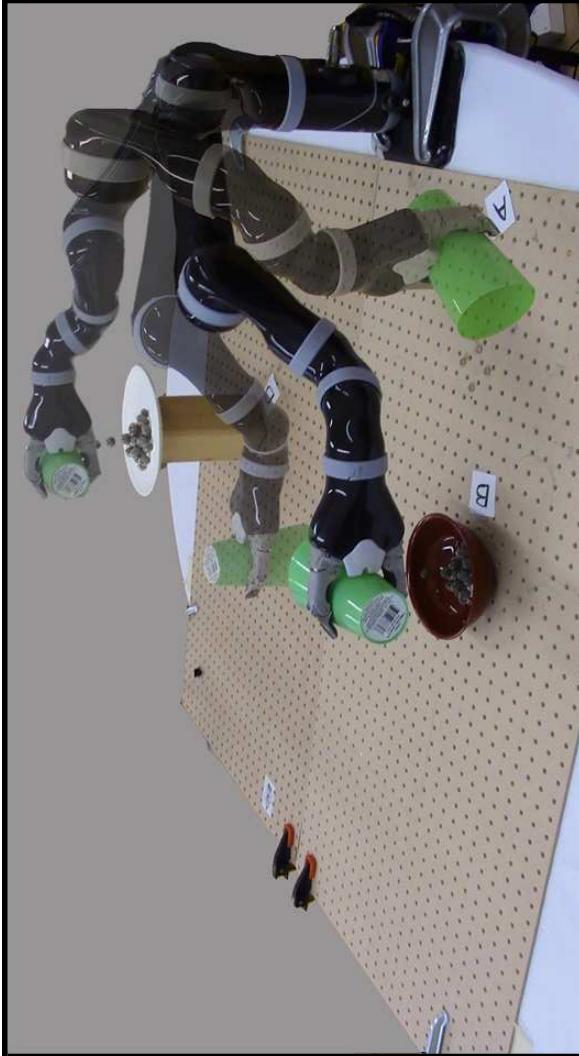


Figure7

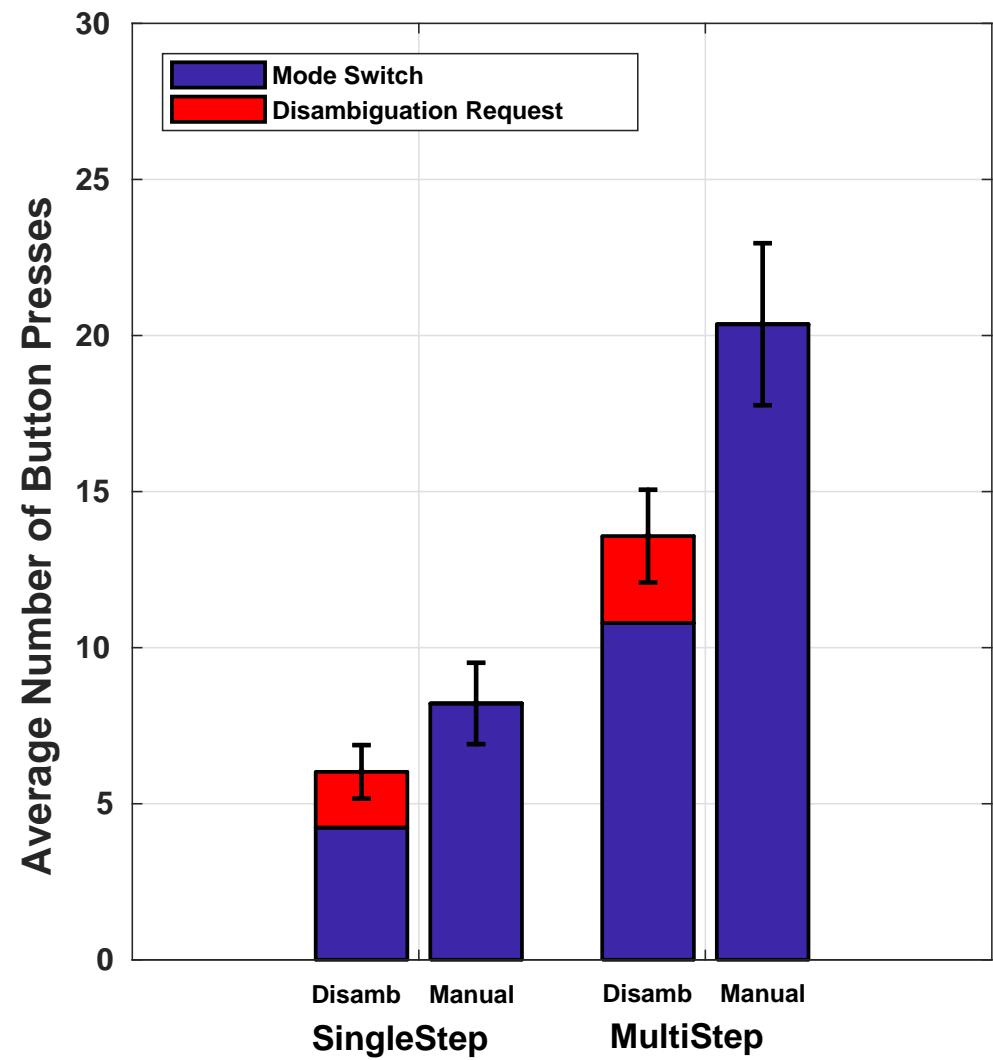
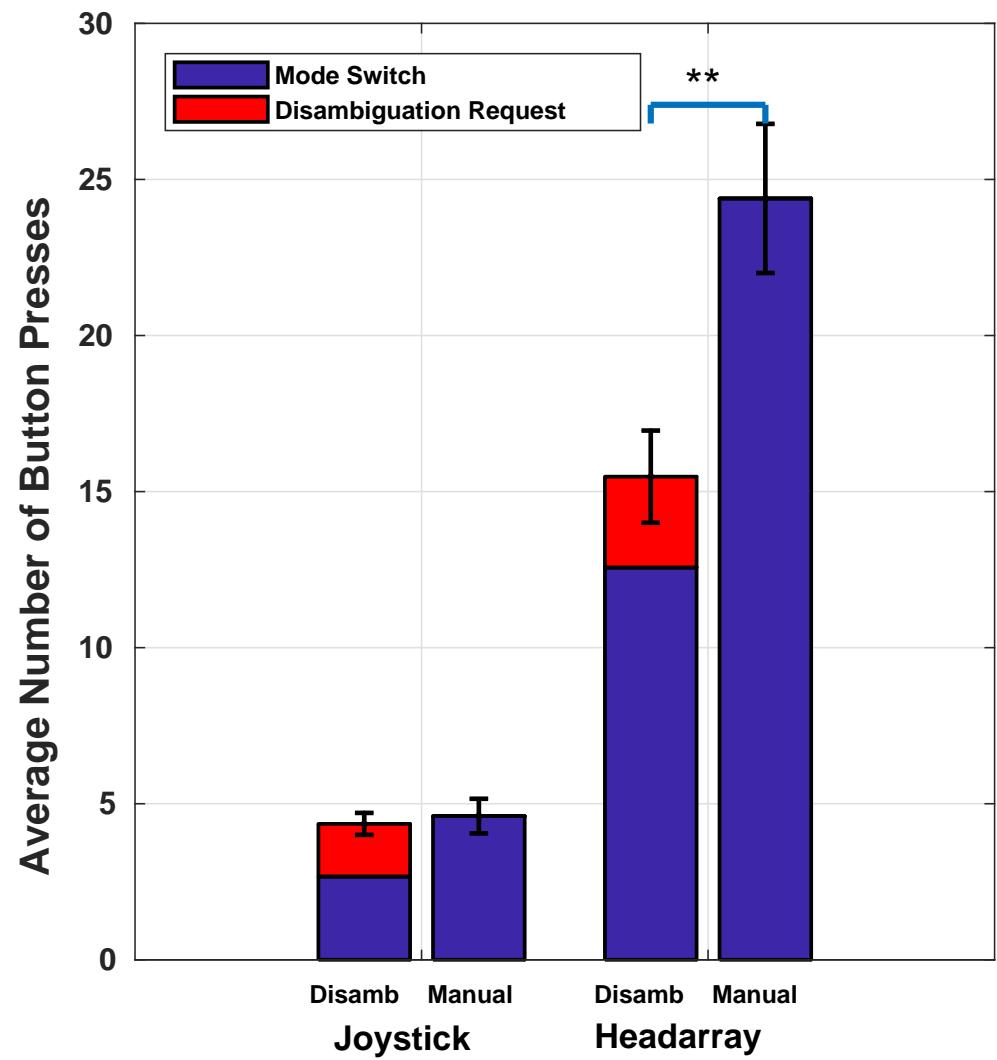
[Click here to download Figure Fig7.eps](#)

Figure8

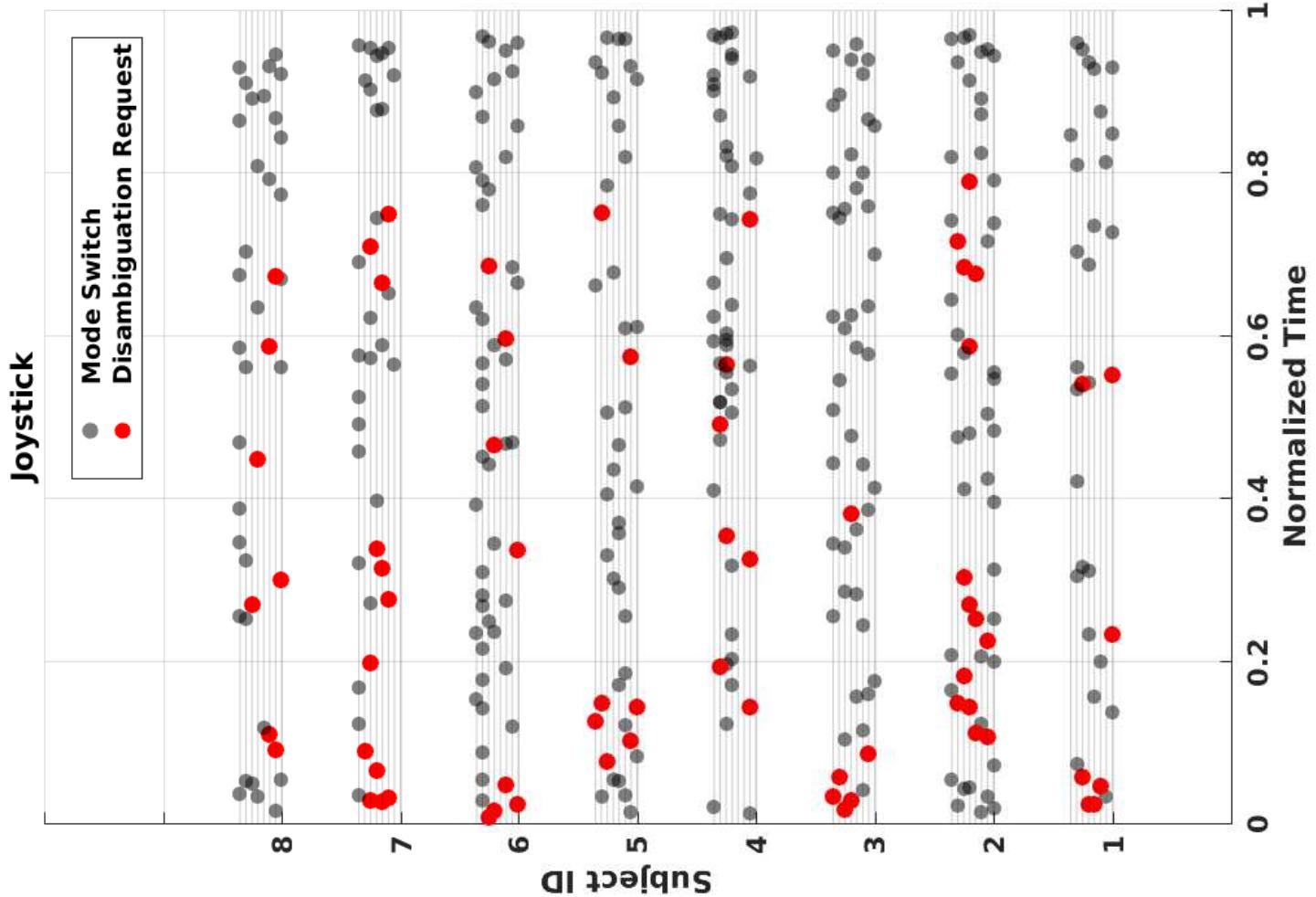
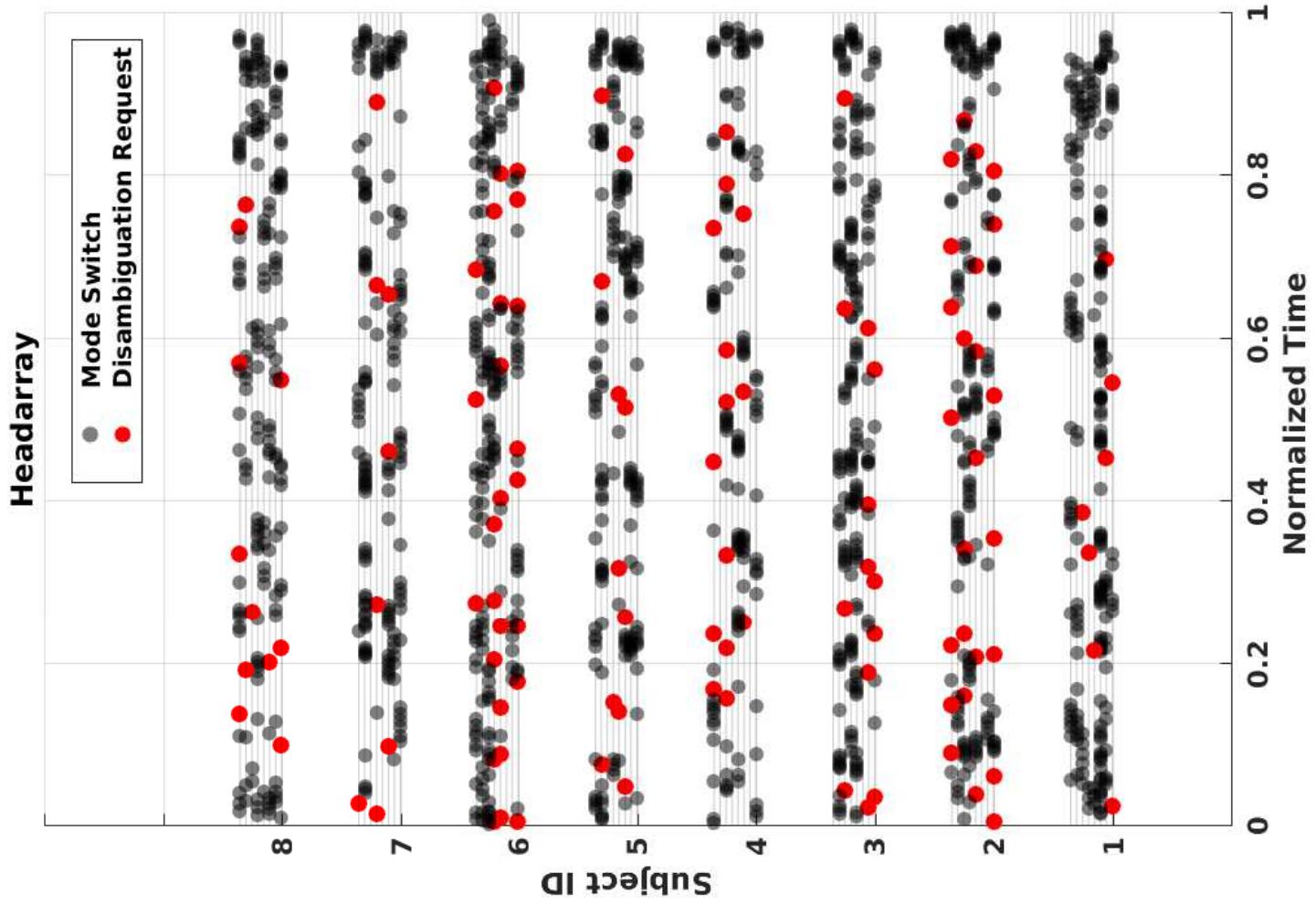
[Click here to download Figure Fig8.eps](#)

Figure9

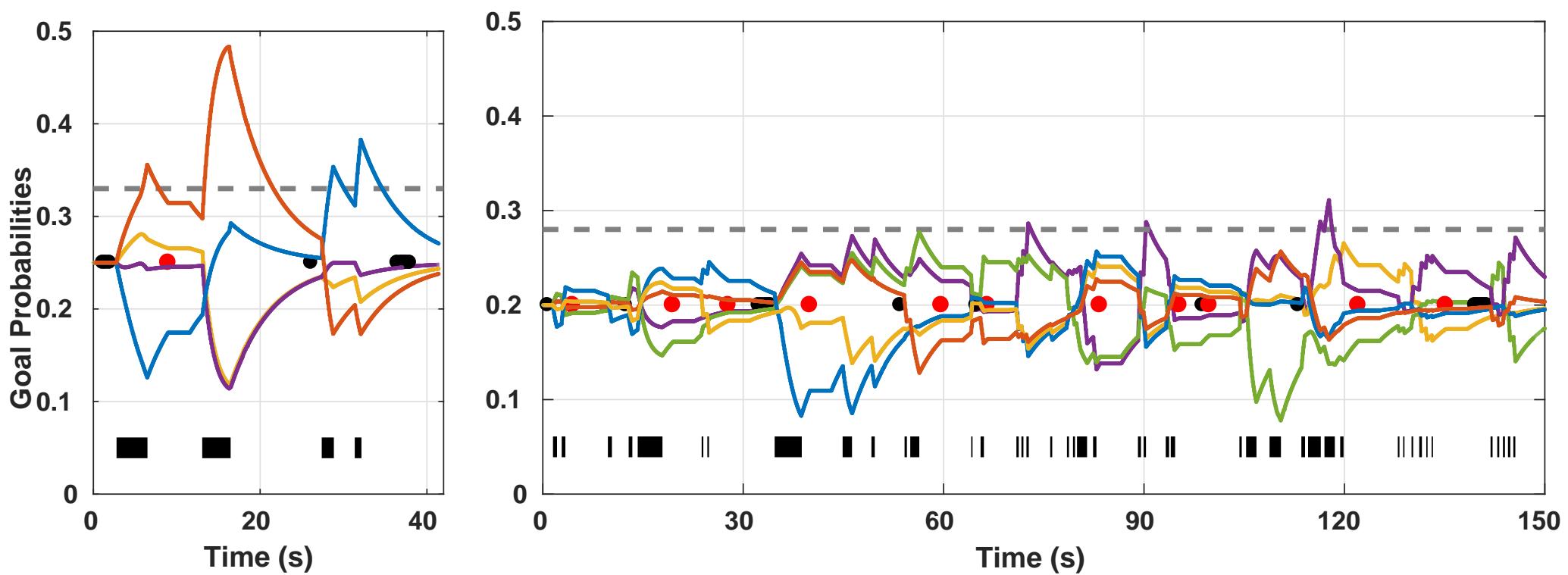
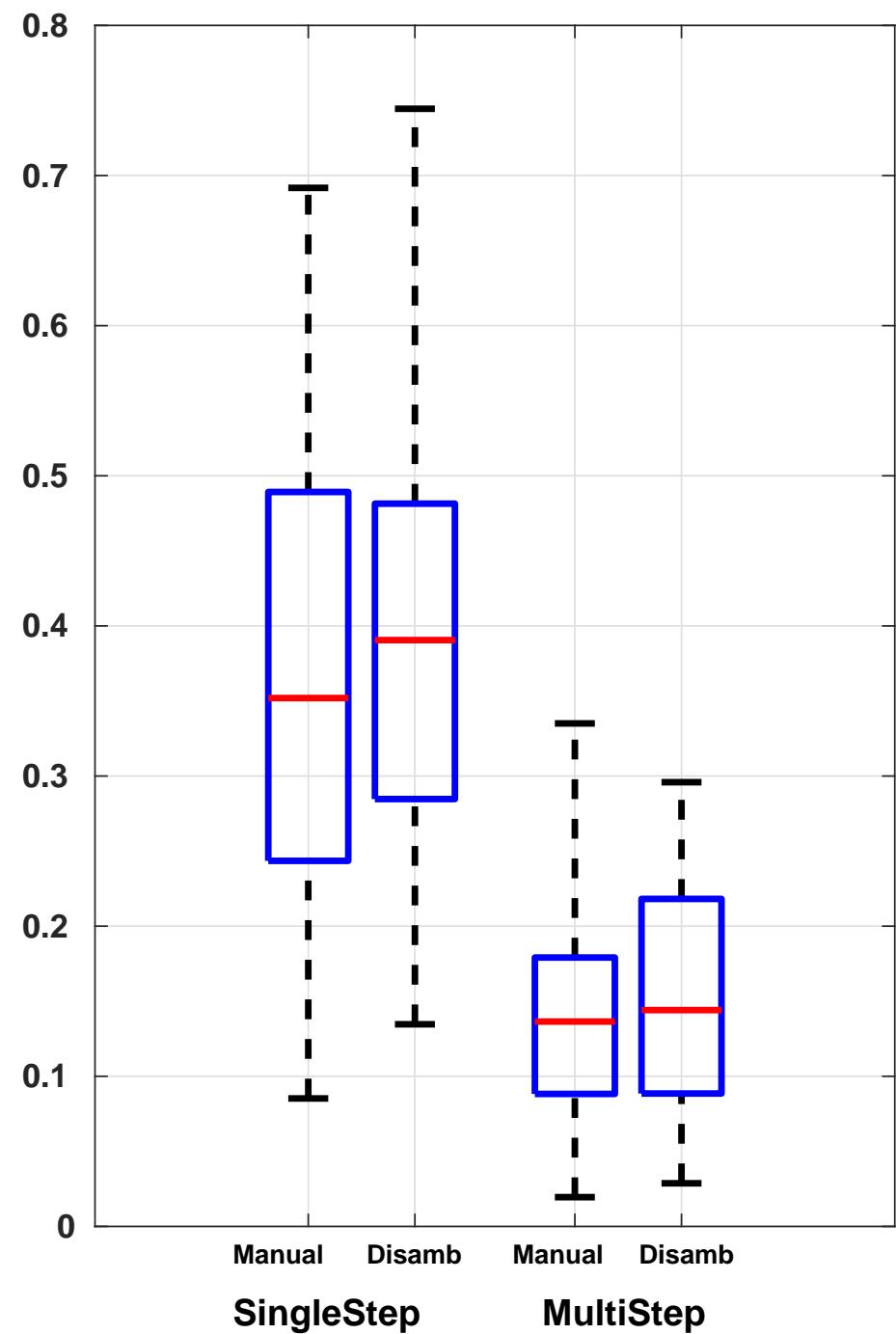
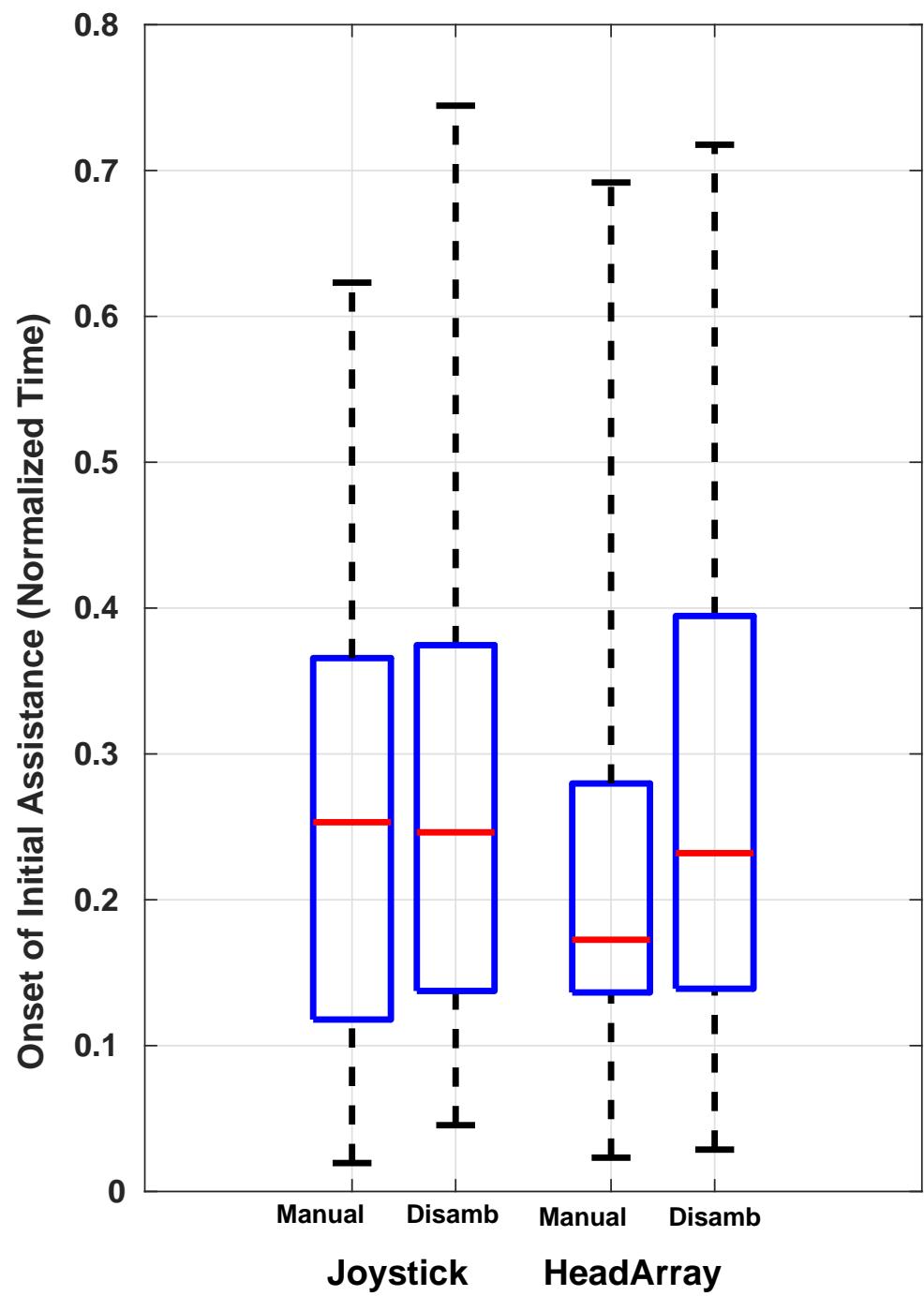
[Click here to download Figure Fig9.eps](#)

Figure10

[Click here to download Figure Fig10.eps](#)

## **Biography – Deepak E. Gopinath**

Deepak E. Gopinath is a third-year doctoral student in the Mechanical Engineering Department at Northwestern University and works with Dr. Brenna Argall in the Assistive and Rehabilitation Robotics Laboratory at the Shirley Ryan AbilityLab in Chicago. He completed his B.Tech in Engineering Physics from IIT Bombay in 2007, after which he moved to Boston, USA to pursue a Professional Diploma in Music at Berklee College of Music majoring in Composition and Jazz Performance. Prior to coming to Northwestern, he completed an M.S in Music Technology at Georgia Tech under Dr. Gil Weinberg where he worked in field of Robotic Musicianship. His current research interests are in developing mathematical formalisms for shared-control architectures for assistive robotic manipulators and information theoretic approaches to characterize human-robot interaction.

## Bio-Dr. Brenna Argall

Brenna Argall is an Associate Professor of Electrical Engineering & Computer Science, Mechanical Engineering and Physical Medicine & Rehabilitation at Northwestern University. She is also a Faculty Research Scientist at the Shirley Ryan AbilityLab, the premier rehabilitation hospital in the United States. She is the director of the **assistive & rehabilitation robotics laboratory (argallab)**. Her research lies in the intersection of robotics, machine learning and human rehabilitation. The mission of the **argallab** is to advance human ability by leveraging autonomy. Dr. Argall is a 2016 recipient of the NSF CAREER award, and her Ph.D. in Robotics (2009) was received from the Robotics Institute at Carnegie Mellon University, as well as her M.S in Robotics (2006) and B.S in Mathematics (2002). Prior to joining Northwestern, she was a postdoctoral fellow (2009-2011) at the École polytechnique fédérale de Lausanne (EPFL), and prior to graduate school she held a Computational Biology position at the National Institutes of Health (NIH).



