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VH[XDOO\ GLPRUSKLF RSWLPD LQ QXWULHQW UHTXLUHPHQWV DQG WKH
DOORFDWLRQ RI UHVRXUFHV PLJKW DOVR RFFXU 1XWULHQW UHTXLUHPHQWV
FRXOG DOVR GLIIHU EHWZHHQ WKH VH[HV EHFDXVH RI GLIIHUHQW FRVWV
DVVRFLDWHG ZLWK VRPDWLF PDLQWHQDQFH LQWUD VSHFLILF
FRPSHWLWLRQ RU LPPXQH @XQFWURQ ZH
FRQVLGHU QXWULHQW UHTXLUHPHQWV DVVRFLDWHG ZLWK RQH SDUWLFXODU
RUJDQLVPDO WUDLW VH[XDOO\ GLPRUSKLF ZHDSRQU\ ,I WKH VH[
VSHFLILF UHVRXUFH RSWLPD K\SRWKHVLV LV FRUUHFW WKHQ PDOHV DQG
IHPDOHV PLJKW GHPRQVWUDWH GLIIHUHQW QXWULHQW LQWDNH WDUJHWV LQ
ODWH LQVWDU VWDJHV ZKHQ VH[XDO ZHDSRQU\ LV GHYHORSLQJ
\$OWHUQDWLYHO\ WKH VH[HV FRXOG GLIIHU LQ WKH W\SH DQG DPRXQW RI
QXWULHQWV WKDW DUH PRVW WLJKWO\ UHJXODWHG RU SULRULWLVHG GXULQJ
IRRG VHOHFWLRQ DQG KHQFH GLIIHU LQ SDWWHUQV RI FRPSHQVDWRU\
QXWULHQW LQWDNH &KDUDFWHUL]DWLRQ RI VH[VSHFLILF QXWULWLRQDO
RSWLPD WKXV KDV FOHDU XWLWLW\ IRU SURELQJ EHKDYLRXUDO DQG
SK\VLRRORJLFDO PHFKDQLVPV JRYHUQLQJ KRZ HDFK VH[IRUDJHV
:H LQYHVWLJDWHG QXWULHQW LQWDNH WDUJHW DQG FRQVXPSWLRQ LQ D
VH[XDOO\ GLPRUSKLF FULFNHW+WKHGLHLODLQJWRQ WUHH ZHWD
FUDVVLGHWVQJ WKH JHRPHWULF IUDPHZRUN IRU QXWULWLRQ
> @ 7UHH ZHGLHLODLQJ

,QIOXHGFH RI 1XWULWLRQDO 6WDWH RQ 6XEVHTXHGW 'LHW
&KRLFH

,Q WKH ILUVW SKDVH RI WKLV H[SHULPHQW HLJKW GD\V WUHH ZHWD LQ
WKH FRQWURO JURXS L H WKH &3 JURXS ZKLFK ZDV DEOH WR VHOI
VHOHFW WKH PDFURQXWULHQW FRPSRVLWLRQ RI WKHLU GLHW VHOHFWHG D
SURWHLQ FDUERK\GUDWH UDWLR WKDW ZDV QHLWKHU VLJQLILFDQWO\ GLIIHUHQW
IURP WKH WDUJHW UDWLR HVWDEOLVKHG LQ WKH LQLWLDO H[SHULPHQW ZLWK
ZLOG ZHWD QRU IURP WKH UDWLR H[SHFWHG LI ZHWD ZHUH HDWLQJ
HTXDO DPRXQWV RI WKH WZR IRRGV 2QH VDP SOH :LOFR[RQ 6LJQHG
5DQN 7HVW S DQG S UHVSHFWLYHO\)LJXUH

,Q WKH VHFRQG SKDVH RI WKH H[SHULPHQW WKH ZHWD WKDW ZHUH
PDLQWDLQHG RQ WKH &3 WUHDWPHQW VHOHFWHG D GLHW ZLWK D
FDUERK\GUDWH SURWHLQ UDWLR WKDW ZDV VLJQLILFDQWO\ JUHDWHU WKDQ
2QH VDP SOH :LOFR[RQ 6LJQHG UDQN 7HVW S)LJXUH
7KHUH ZDV QR VLJQLILFDQW HIIHFW RI GLHW LQ SKDVH RQ WKH
PDFURQXWULHQW UDWLR VHOHFWHG LQ SKDVH HLWKHU LQ D FRPSDULVRQ
RI WKH JURXS WKDW ZHUH FRQILQH WR WKH 33 DQG && WUHDWPHQWV
LQ SKDVH ,QGHSHQGHQW 6DPSOHV 0HGLDQ 7HVW S ! RU LQ
D FRPSDULVRQ RI DOO WKUHH SUH WUHDWPHQW JURXS S
7KLV LQGLFDWHV WKDW WKH ZHWD GLG QRW FRPSHQVDWH IRU D SULRU
SHULRG RI FRQILQH PHQW WR D GLHW RI HLWKHU H[FHVVLVH SURWHLQ RU

'LVFXVVLRQ

0DQ\ VSHFLHV RI DQLPDOV KDYH EHHQ GHPRQVWUDWHG WR
VHOHFWLYHO\ IRUDJH EDVHG RQ WKH PDFURQXWULHQW FRQWHQW RI
DYDLODEOH @RRG\WV\XUFH DFTXLVLWLRQ FDQ WKXV EH
XQGHUWRRG E\ FRPSDULQJ WKH EDODQFH RI QXWULHQWV DYDLODEOH LQ
IRRG WR WKDW UHTXLUHG E\ DQ RUJ@QLVP\V SKHQRW\SH >
3URWHLQ DQG FDUERK\GUDWH DUH DPRQJ WKH QXWULHQW JURXSV PRVW
VWURQJO\ UHJXODWHG E\ KHUELYRURXV LQVHFWV DQG DUH WKXV
H[SHFWHG WR SOD\ D GRPLQDQW UR@H LQ LQJHVWLYH EHKDYLRXU >
:H LGHQWLILHG D QXWULHQW WDUJHW IRU WKH :HOOLQJWRQ WUHH ZHWD
+HPLGHLQD FUDZ\W\GHQ\QGLYLGXDOV VHOHFW PRUH
FDUERK\GUDWH UHODWLYH WR SURWHLQ +RZHYHU ZH GLG QRW GHWHFW D

RFFXUULQJ IHHGLQJ HQYLURQPHQW DQG GLHW EUHDGWK LQ WKH QDWXUDOO\

0.50-



)LJXUH)HHGLQJ LQ WKH WKUHH JURXSV LQ SKDVH WZR RI WKH URSJ & HKJ PGFBQQYERX
 HDWHQ FDUERK\GUDWH ULFK IRRG RQO\ IRU VL[ZHHNV GXULQJ SKDVH RQH RI WKH F
 FDUERK\GUDWH ULFK IRRGV ERWK DYDLODEOH Q DQG 33 SURWHLQ ULFK IRRG RQO
 GRL MRXUQDO SRQH J

\$XWKRU &RQWULEXWLRQV

&RQFHLYHG DQG GHVLJQHG WKH H[SHULPHQWV 30: '5 005
3HUIRUPHG WKH H[SHULPHQWV 30: \$QDO\]HG WKH GDWD 30:
'5 :URWH WKH PDQXVFULSW 30: '5 005

5HIHUHQFHV

0DWWVRQ :-- +HUELYRU\ LQ UHODWLRQ WR SODQW QLWURJHQ FRQWHQW
\$QQXDO 5HY (FRO 6\WV ±DQQXURLY HV

ORG\ . 8QVLFNHU 6% /LQVHQPDLU .()LWQHVV UHODWHG GLHW PL[LQJ
E\ LQWUDVSHFLILF KRVW SODQW VZLWFKLQJ RI VSHFLDOLVW LQVHFW KHUELYRUHV
(FRORJ\ ± GRL 3XE0HG
5DXEHQKHLPHU ' 6LPSVRQ 6 0D\QW] ' 1XWULWLRQ HFRORJ\ DQG
QXWULWLRQDO HFRORJ\ WRZDUG DQ LQWHJUDWHG IUDPHZRUN)XQFW (FRO ±
GRL M [6FKPLW] 2 +HUELYRU\ IURP LQGLYLGXDOV WR HFRV\WHPV \$QQXDO
5HY (FRO (YRO 6\WV ±DQQXURLY HFROV\

5DXEHQKHLPHU ' 6LPSVRQ 6 2UJDQLVPDO VWRLFKLRRPHWU\
TXDQWLI\LQJ QRQ LQGHSHQGQHFH DPRQJ IRRG FRPSRQHQWV (FRORJ\
± GRL
%HKPHU 67 ,QVHFW KHUELYRUH QXWULHQW UHJXODWLRQ \$QQXDO 5HY
(FRO 6\WV ± 3XE0HG
%MRUQGDO . \$ 'LHW PL[LQJ QRQDGGWLWLYH LQWHUDFWLRQV RI GLHW LWHPV LQ
DQ RPQLYRURXV IUHVKZDWHU WXUWOH (FRORJ\ ± GRL

&UX] 5LYHUD (+D\ 0(7KH HIIHFW RI GLHW PL[LQJ RQ FRQVXPHU
ILWQHVV PDFURDOJDH HSLSK\WHV DQG DQLPDO PDWWHU DV IRRG IRU PDULQH
DPSKLSRGV 2HFRORJLD ± GRL V
%RHUVPD 0 (OVHU -- 7RR PFK RI D JRRG WKLQJ RQ
VWRLFKLRLPHWULFDO\ EDODQFHG GLHWV DQG PD[LPDO JURZWK (FRORJ\
± \$YDLODEOH RQOLQH DW GRL
> 702\$*7@ &2 3XE0HG

6LPSVRQ 6- 6LEO\ 50 /HH .3 %HKPHU 67 5DXEHQKHLPHU '
2SWLPDO IRUDJLQJ ZKHQ UHJXODWLQJ LQWDNH RI PXOWLSOH QXWULHQWV \$QLP
%HKDY ± GRL M DQEHKDY
5DXEHQKHLPHU ' 6LPSVRQ 6- 1XWULHQW EDODQFLQJ LQ
JUDVVKRSSHUV EHKDYLRXUDO DQG SK\VLRRORJLFDO FRUHHODWHV RI GLHWDU\
EUHDGWK - ([S %LRO ±MHEGR3XE0HG

5DXEHQKHLPHU ' -RQHV 6\$ 1XWULWLRQDO LPEDODQFH LQ DQ H[WUHPH
JHQHUDOLVW RPQLYRUH WROHUDQFH DQG UHFYHU\ WKURXJK FRPSOPHQWU\
IRRG VHOHFWRQ \$QLP %HKDY M DQEHKDYRL

5DXEHQKHLPHU ' 0D\QW] ' 6LPSVRQ 6- 7;IW 6 1XWULHQW

6WHUQHU 5: (OVHU -- (FRORJLFDO VWRLF61FKPHUW\ -07KHEDRORDDQF3 :LOGHU 60 5\SVWUD \$/
HOHPHQWV IURP PROFXOHV WR WKH ELRVSKRQ\GWHBQWQFHHURK\ D3LHOFVWWRKH IRUDJLQJ RI D JHQH
8QLYHUVLV\ 3UHVV SS 3/26 21(H GRL MRXUQDO SRQ3XE0HG
)URVW 3& (YDQV :KLWH 0\$)LQNH0 =9 -HQVHQ 7& 0\$W HHS 9
\$UH \RX ZKDW \RX HDW" 3K\VLRORJLFDO FRQVWUDLQWV RQ RUJDQLVPDO
VWRLFKLRRPHWU\ LQ DQ HOHPHQWDOO\ LPEDODQFHHG ZRUOG 2LNRV ±
GRL M [
6LPSVRQ 6- 5DXEHQKHLPHU ' 7KH KXQJU\ ORFXVW \$GY 6WXG\
%HKDY ± GRL 6
6LPSVRQ 6- 5DXEHQKHLPHU ' &KDUOHVVRQ 0\$ &OLVVROG)- DQG WKH
\$5& 1= YHJHWDWLRQ IXQFWLRQ QHWZRUN KHUELYRU\ ZRUNLQJ JURXS
ORGHOOHQJ QXWULWLRQDO LQWHUDFWLRQV)URP LQGLYLGXDOV WR FRPPXQLWLHV
7UHQGV (FRO (YRO ±M WGRHLH 3XE0HG

.HOO\ &' E)LJKWLQJ IRU KDUHPV DVVHVVPHQW VWUDWHJLHV GXULQJ
PDOH PDOH FRQWHVWV LQ WKH VH[XDOO\ GLPRUSKLF :HOOLQJWRQ WUHH ZHWD
\$QLP %HKDY ± GRL M DQEHKDY
%RQGULDQVN\ 5 0DNODNRY \$ =DMLWVFKHN) %URRNV 5 6H[XDO
VHOHFWLRQ VH[XDO FRQOLFW DQG WKH HYROXWLRQ RI DJHLQJ DQG OLIVSDQ
)XQFW (FRO ± GRL M [
%HKPHU 6 5DXEHQKHLPHU ' 6LPSVRQ 6-)UHTXHQF\ GHSHQGHQW
IRRG VHOHFWLRQ LQ ORFXVWV D JHRPHWULF DQDO\VLV RI WKH UROH RI QXWULHQW
EDODQLQJ \$QLP %HKDY ± GRL DQEH
&OLVVROG)- 6DQVRQ *' 5HDG - 6LPSVRQ 6- *URVV YV QHW
LQFRPH KRZ SODQW WRXJKQHVV DIIHFWV SHUIRUPDQFH RI DQ LQVHFW
KHUELYRUH (FRORJ\ ± GRB3XE0HG

%HKPHU 67 -RHUQ \$ &RH[LVLWLQJ JHQHUDOLVW KHUELYRUHV RFFXS\
XQLTXH QXWULWLRQDO IHHGLQJ QLFKHV 3URF 1DWO \$FDG 6FL 8 6 \$ ±
GRL SQDV 3XE0HG