

\$MFBS \$FMM "EFOPDBSDJOPNB PG \$FSWJY 3B  
UIF 'FSUJMJUZ

\$QWRQL /OXHFD/XLV +HUUDL] 'RORUV 3LTXHU <DVPLQH 0DD]RX]]L DQG &DUPHQ 0HGLQD  
0XWLGLVFLSOLQDU\ 8QLW IRU \$EGRPLQR 3HOYLF 2QFRORJLF 6XUJHU\ 08\$326 8QLYHUVLW\ \*HQHUDO +RV  
&RUUHVSQRQLQJ DXWKRU \$QWRQL /OXHFD 0XWLGLVFLSOLQDU\ 8QLW IRU \$EGRPLQR 3HOYLF 2QFRORJLF  
RI 0HGLFLQH 8QLYHUVLW\ -DXPH , 6SDLQ 7HO (PDLO DQWRQLOOXHFD#JPDLQ FRP  
5HF GDWH 0DU\$FF GDWH 0DU 3XE GDWH 0DU  
&RS\ULJKW /OXHFD \$ HW DO 7KLV LV DQ RSHQ DFFHVW DUWLFOH GLVWULEXWHG XQGHU WKH WHUPV RI  
XVH GLVWULEXWLRQ DQG UHSURGXFWLRQ LQ DQ\ PHGLXP SURYLGHG WKH RULJLQDO DXWKRU DQG VRXU  
, QWURGXFWLRQ

&DUFLQRPD RI WKH XWHULQH FHYUL[ LV D FRPPRQ J\QHFRORJLF  
PDOLJQDQW QHRSODVP R\B\O\WR\ F\B\B\W\Q\H\K\Z\R\W\Q\G\O\J\LF\DO  
W\SH RI PDOLJQDQW FHYULFDO QHRSODVPV LV VTXDPRXV FHOO FDUFLQRPD > @  
&OHDU FHOO DGHQRFDUFLQRPDV &&\$& RI WKH XWHULQH FHYUL[ LV D UDUH  
GLVHDVH DFFRXQWLQJ IRU RQO\ RI DOO DGHQRFDUFLQRPDV RI WKH XWHULQH  
FHYUL[ > @ 3ULPDU\ &&\$& RI WKH XWHULQH FHYUL[ LV D UDUH QHRSODVWLF  
HQWLW\ ZKLFK RFFXUV LQ \RXQJ ZRPHQ H[SRVHG WR '(6 LQ XWHUR SULPDU\  
&&\$& ZLWKRXW '(6 H[SRVXUH LQ XWHUR LV H[WUHPHO\ UDUH +HUH ZH  
UHSRUW D \HDUV ROG 6SDQLVK IHPDOH ZLWK SULPDU\ &&\$& RI WKH XWHULQH  
FHYUL[ ZLWK QR PDWHUQDO KLVWRU\ RI '(6 LQJHVWLRQ GXULQJ SUHJQDQF\

&DVH 5HSRUW

\$ \HDU ROG ZRPDQ QXOOLJUDYLGD ZLWKRXW DQ\ FRH[LVWLQJ GLVHDVH  
ZLWK QHJDWLYH IDPLQLODU FDQFHU KLVWRU\ SUHVHQWHG LUUHJXODU YDJLQD  
EOHHGLQJ IRU ODVW WZR PRQWKV VRPHWLPHV DV D PHQVWUXDWLRQ DQG RWKHU  
DV D VSRWWLQJ 5RXWLQH J\QHFRORJLFDO VFUHHQLQJ ZHUh QRUPDO WKH ODV  
RQH ZDV D \HDU DJR



)LJXUH XPRUDO SUROLIHUDWLRQ RI WXEXODU JODQGXODU DQG SDSLOODU\ SDWWHUQ ZLWK FOHDU FHOO RI ODUJH DQG HRVLQRSKLOLF F\WRSODVP DQG DW\SLFDO ODUJH QXFOHXV

([SRVXUH WR '(6 ZDV GHQLHG \* \QHFRORJLFDO H[DPLQDWLRQ UHYHDOHG  
FHYULFDO SRO\SR LG \HS\DL\W\Q\H\Q\W\ XQGH\U\Z\H\Q\W\ VXUJHU\ IRU D FHYULFDO FRQL]DWLRQ +LVWRSWDKRORJLFDO H[DPLQDWLRQ VKRZHG  
SDSLOODU DQG WXEXODU SUROLIHUDWLRQV DQG FOHDU FHOO DGHQRFDUFLQRP )LJXUHV DQG \$OO RWKHU ELRFKHPLFDO KHPDWRORJLFDO DQG  
UDGLRORJLFDO WHVWV ZHUh ZLWKLQ QRUPDO OLPLWV &RQWUDVV HQKDQFHG  
FRPSXWHG WRPRJUDSKLF VFDQ GLG QRW UHYHDO DQ\ VXJJHVWLYH OHVLRQ RI  
PDOLJQ\ QSP\ WLHQW ZDV WKHUHIRUH GLDJQRVHG DV D FDVH RI &&\$& RI  
P \W\@PD

P O p QPQ DJ\LE LE`0 P @@ E €PH dR\APU•SDW@ RRDÝ€`

